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PHYSICAL AND CHEMICAL PROPERTIES OF JP-4 FUEL FOR 1978. (U)
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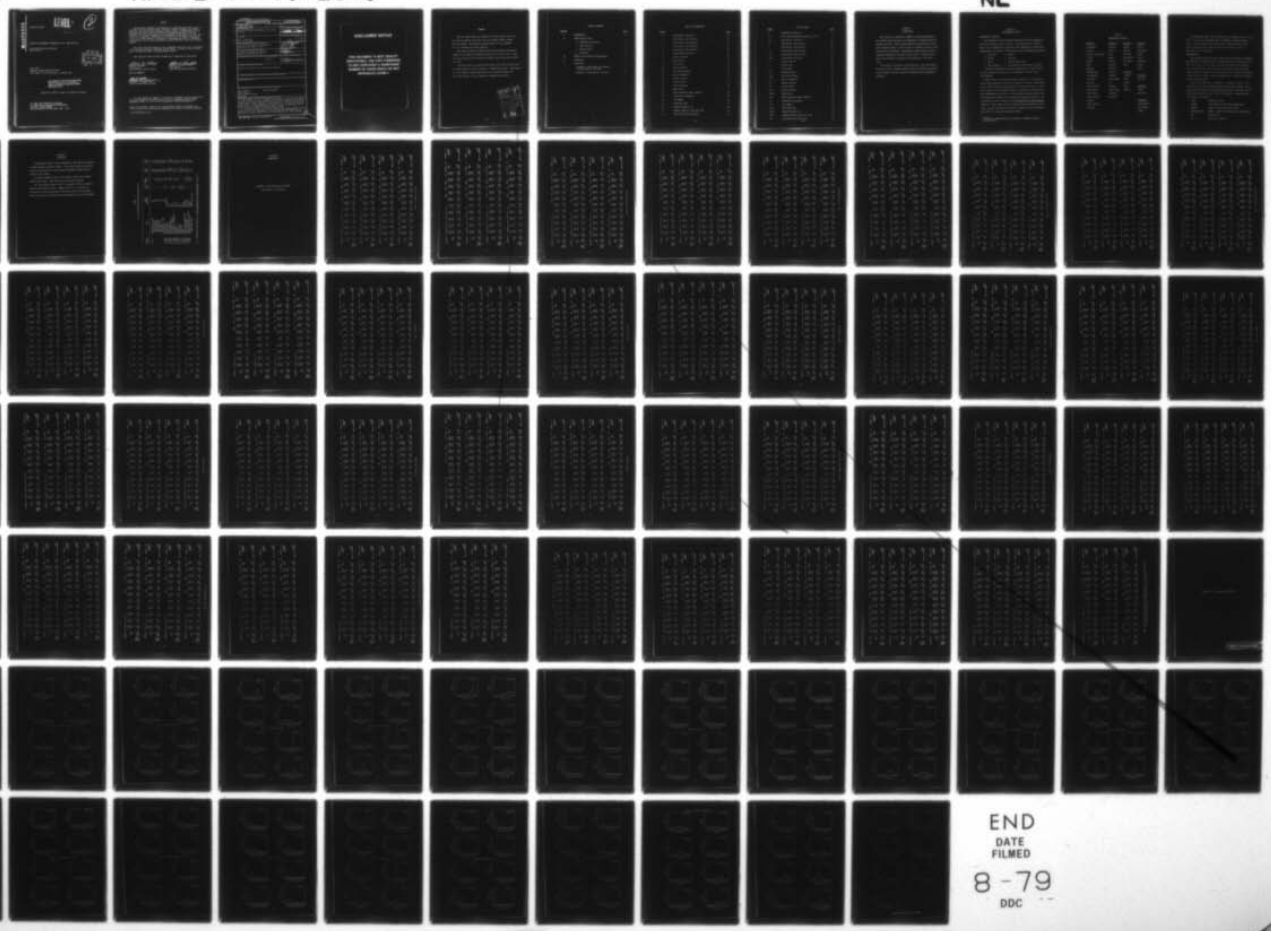

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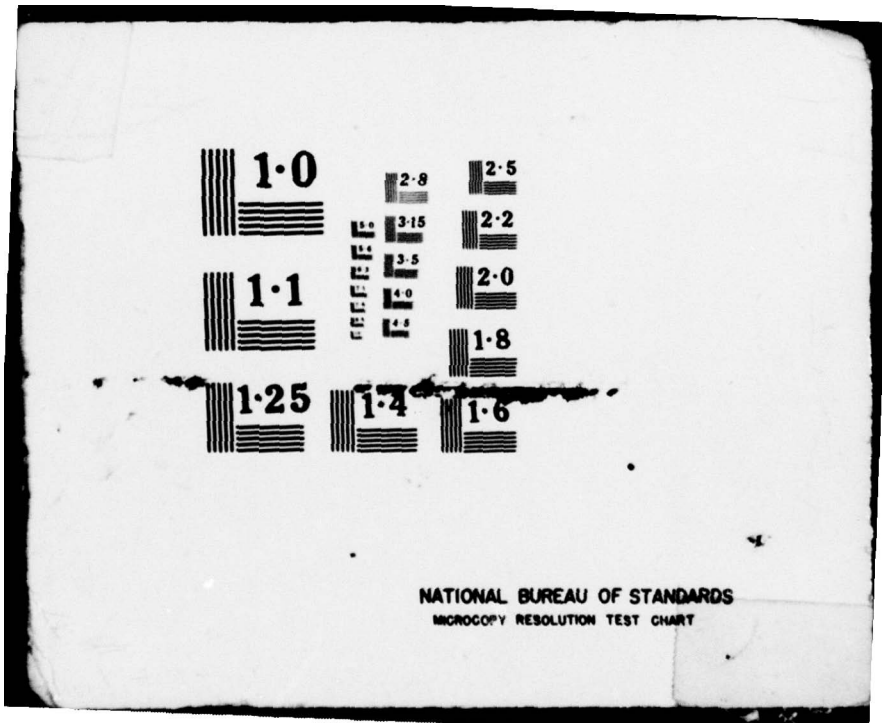
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AFAPL-TR-79-2040

PHYSICAL AND CHEMICAL PROPERTIES OF JP-4 FUEL FOR 1978

Fuels and Lubrication Division
Fuels Branch

April 1979
TECHNICAL REPORT AFAPL-TR-79-2040
Final Report for Period January - December 1978

Approved for public release; distribution unlimited

AIR FORCE AERO PROPULSION LABORATORY
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This technical report has been reviewed and is approved for publication.

Blaine A. Heitkamp
Fuels Branch
Fuels and Lubrication Division

Arthur V. Churchill, Chief
Fuels Branch
Fuels and Lubrication Division

FOR THE COMMANDER

Blackwell C. Dunnam, Chief
Fuels and Lubrication Division

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Random samples of 651 fuel inspection reports on JP-4 fuel have been analyzed for the calendar year 1978. Determination of average properties and frequency distribution of these properties has been undertaken. Properties selected were twenty-three different parameters which coincide with JP-4 fuel specifications (MIL-T-5624K). Through comparison of previous reports, specifically 1975, it can be noted that no major fluctuations have occurred.

In compiling the data, all reports were given equal weight regardless of what quantity of fuel was represented. Also, this year the only method used for testing fuel thermal stability was the JFTOT (ASTM Method D 3241) Fuel Coker.

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FOREWORD

This JP-4 fuels report was prepared by the Fuels Branch of the Air Force Aero Propulsion Laboratory, Air Force Systems Command, Wright-Patterson AFB, OH. The work was performed under work unit 304805FL. Mr. B. A. Heitkamp was project engineer.

This report presents a computer generated and assembled statistical summary of the chemical and physical properties of JP-4 Jet Fuel. These fuels were procured by the Defense Fuel Supply Center during the calendar year 1978.

The author wishes to extend his gratitude to Miss Cheryl Florence and Mr. Kermit Redmon for their assistance in assembling the data. Appreciation is also extended to Miss Elaine Baldwin, Miss Charlene Diamond, and Mrs. Linda Phillips for their support in assembling this report.

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SECTION I

INTRODUCTION

This report is a statistical summary of assorted properties of JP-4 Aviation fuel delivered to the Department of Defense during the calender year 1978. These various properties are recorded on a fuel batch inspection report, a copy of which is submitted to the Air Force Aero Propulsion Laboratory. Approximately twenty percent of these inspection reports are the basis for this report. Similar fuel reports were presented in the years 1963 through 1967, 1970, 1972, & 1975.

This report will provide a quick reference on JP-4 fuel quality. One will be able to identify numerous ranges of properties along with their incidence, and also identify differences between geographical districts.

SECTION II
ORGANIZATION OF DATA

GEOGRAPHICAL DISTRICTS

Fuel inspection reports have been separated into eight geographical districts according to point of origin. These districts are listed in Table I and are essentially the same as those designated by the Petroleum Administration for Defense. These districts may be summarized as follows:

1. East Coast
2. Midwest
3. South
4. Rocky Mountain
5. Pacific
6. Far East
7. Europe and Near East
8. South America, West Indies, and Canada

It should be emphasized that this classification is based on point of origin (refinery location) and not destination or point of use.

TESTS SELECTED

Twenty-three of the inspection tests required by the JP-4 specification, MIL-T-5624K, were selected for analysis of results. These tests differ slightly from the tests analyzed in the previous report. In this year's report, the fuel thermal stability is measured by the JFTOT Fuel Coker (ASTM Method D 3241) only. A new parameter has been added as well. The percentage of Hydrogen is calculated from submitted properties. The calculation for this is found in the 1976 Annual Book of ASTM Standards, Volume 25[1]. Also, smoke volatility index has been eliminated as a parameter. Finally, the units for net heat of combustion have been changed from BTU's/lb to mega joules/kilogram (MJ/kg).

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1 ASTM D3343, Standard Method for Estimation of Hydrogen Content of Aviation Fuels.

TABLE I

GEOGRAPHICAL DISTRICTS

DISTRICT 1	DISTRICT 2	DISTRICT 3	DISTRICT 5
Connecticut	Illinois	Alabama	Arizona
Delaware	Indiana	Arkansas	California
District of Columbia	Iowa	Louisiana	Nevada
Florida	Kansas	Mississippi	Oregon
Georgia	Kentucky	New Mexico	Washington
Maine	Michigan	Texas	Alaska
Maryland	Minnesota		Hawaii
Massachusetts	Missouri	DISTRICT 4	
New Hampshire	Nebraska	Colorado	DISTRICT 6
New Jersey	North Dakota	Idaho	Far East
New York	Ohio	Montana	
North Carolina	Oklahoma	Utah	DISTRICT 7
Pennsylvania	South Dakota	Wyoming	Europe
Rhode Island	Tennessee		Near East
South Carolina	Wisconsin		
Vermont			DISTRICT 8
West Virginia			South America
Virginia			West Indies
			Canada

The ASTM method number and the ASTM precision statements refer to those found in the previously mentioned book of standards, including Volumes 23 and 24. The specification test limits refer to publication MIL-T-5624K dated 1 April 1976 and are much the same as the previous edition of MIL-T-5624J of 30 October 1973.

TABULATED DATA

Many reports submitted contained values which were invalid or ambiguous, and therefore the value was waived. Mercaptan Sulfur was excluded in about 50% of the reports. This is due to the fact that there is an alternate test, called the Doctor Test, which is also acceptable under MIL-T-5624K. Recovery at 400°F, though still reported by many fuel suppliers and included in Table XXV, is no longer a required parameter and is therefore eliminated from the District Report.

Tables III through XXIV of Appendix A are computer printouts of the distribution, mean, and standard deviation for each fuel property. These tables are each arranged by geographical district while Table XXV gives the 1978 overall population totals for each fuel property. Nomenclature for these tables is as follows:

SIGMA	Standard deviation
REPORTS	Total number of fuel reports represented.
SAMPLES	Number of reports with valid value.
MISSING VALUES	Number of reports with missing or invalid values.
GTR	Greater than.
LEQ	Less than or equal to.

FREQ	Number of values within limits shown.
PCNT	Percent of values within limits shown.
ACUM	Cumulative percent to upper limit.

HISTOGRAMS

Figures 1 through 24 of Appendix B are computer-generated plots of the distribution data given in Tables III through XXV of Appendix A. These histograms represent a convenient visualization of the property frequency distributions.

SECTION III

METHOD OF DATA REDUCTION AND ANALYSIS

The method of data reduction and analysis used in this year's report is basically the same as used in the previous report by Mr. L. C. Angello[2].

Fuel reports from one complete week were separated from the monthly total and used for this report. This procedure was followed for each month in 1978. In this way manpower output is reduced without significantly affecting the accuracy of the results.

---

2 Angello, L. C., Physical and Chemical Properties of JP-4 Fuel for 1975, Wright-Patterson AFB, OH 1976.

SECTION IV
DISCUSSION

As previously stated, the data presented in this report are based on a random sampling of monthly reports. Since these reports are provided without a specification of fuel quantity represented, equal weight is carried by each sample.

As could be expected, some of the reported values will be beyond specification limits. When this occurs, the value is waived.

As in the previous report (1975), no systematic effort was made to identify chronological trends. However, Table II will identify the differences in mean values between the previous report and this year's report, along with identifying the testing method and the units reported.

TABLE II

MIL-T-5624K SPECIFICATION LIMITS FOR JP-4

METHOD	TEST	UNITS REPORTED	SPEC LIMITS MIN.	SPEC LIMITS MAX.	1978 MEAN	1975 MEAN
D 86	Distillation, IBP	°F	--	--	138	141
	10% Recovered	°F	--	--	201	211
	20% Recovered	°F	--	293	228	233
	50% Recovered	°F	--	374	295	295
	90% Recovered	°F	--	473	401	403
	End Point	°F	--	518	459	457
	% Recovered, 400°F	%	--	--	90.1	86.8
D 1298	API Gravity	°API	45.0	57.0	53.9	53.9
D 381	Existent Gum	mg/100 ml	--	7.0	.8	.6
D 1552	Total Sulfur	wt %	--	.4	.042	.05
D 1323	Mercaptan Sulfur	wt %	--	.001	.0005	.0004
D 323	Reid Vapor Pressure	psi	2.0	3.0	2.6	2.6
D 1405	Net Heat of Combustion	MJ/Kg	42.8	--	43.5	43.5
D 1319	Aromatics	Vol %	--	25.0	11.4	10.9
D 1319	Olefins	Vol %	--	5.0	.8	.8
D 1322	Smoke Point	mm	20.0	--	27.6	28.1
(c)	% Hydrogen	Wt. %	13.6	--	14.36	--
D 2550	WISM	WISM	70.0		90.0	90.0
D 2776	Particulate Contaminant	mg/liter	--	1.0	.37	.4
D 3242	Total Acid Number	mg KOH/g	--	.015	.006	.006
D 2276	Filtration Time, 1 gallon	minutes	--	15.0	5.1	5.0
D 3241	Thermal Stability ΔP	mm Hg	--	25.0	1.1	.83
	Tube Color Code	ASTM Color Code	--	<3	1.0	.84

(c) calculated from equation in 1976 Annual Book of ASTM Standards, Volume 25.

SECTION V
CONCLUSIONS

APPENDIX A - Mean Values and Frequency Distribution for 1978 Data

DISTRICT 1 DISTILLATN INIT. BOILING PT. DEG F MEAN 147. SIGMA 14.5 REPORT 66. SAMPLES 66

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	2	1	0	4	6	9	7	9	5	8	12	3	0
PCNT	3.03	1.52	0.00	6.06	9.09	13.64	10.61	13.64	7.58	12.12	18.18	4.55	0.00
ACUM	3.03	4.55	4.55	10.61	19.70	33.33	43.94	57.58	65.15	77.27	95.45	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN INIT. BOILING PT. DEG F MEAN 140. SIGMA 13.8 REPORT 169. SAMPLES 168

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	6	5	10	24	29	28	15	14	11	12	7	7	1
PCNT	3.57	2.98	5.95	14.29	17.26	16.67	8.93	8.33	6.55	7.14	4.17	4.17	.59
ACUM	3.57	6.55	12.50	26.79	44.05	60.71	69.64	77.98	84.52	91.67	95.83	100.00	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN INIT. BOILING PT. DEG F MEAN 135. SIGMA 12.0 REPORT 251. SAMPLES 213

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	13	13	11	46	27	30	29	17	17	6	2	0	38
PCNT	6.10	6.10	5.16	22.54	12.68	14.08	13.62	7.98	7.98	2.82	.94	0.00	15.14
ACUM	6.10	12.21	17.37	39.91	52.58	66.67	80.28	88.26	96.24	99.06	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN INIT. BOILING PT. DEG F MEAN 133. SIGMA 11.6 REPORT 60. SAMPLES 59

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	4	6	4	11	9	8	9	4	4	0	0	0	1
PCNT	6.78	10.17	6.78	18.64	15.25	13.56	15.25	6.78	6.78	0.00	0.00	0.00	1.67
ACUM	6.78	16.95	23.73	42.37	57.63	71.19	86.44	93.22	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table III. Distillation, Initial BP

DISTRICT 5 DISTILLATN INIT. BOILING PT. DEG F MEAN 139. SIGMA 11.3 REPORT 77. SAMPLES 76

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	1	2	4	7	19	16	11	3	5	3	4	1	1
PCNT	1.32	2.63	5.26	9.21	25.00	21.05	14.47	3.95	6.58	3.95	5.26	1.32	1.30
ACUM	1.32	3.95	9.21	18.42	43.42	64.47	78.95	82.89	89.47	93.42	98.68	100.00	PRCNT OF REPORTS

DISTRICT 6 DISTILLATN INIT. BOILING PT. DEG F MEAN 125. SIGMA 6.4 REPORT 2. SAMPLES 2

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	0	1	0	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	50.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 DISTILLATN INIT. BOILING PT. DEG F MEAN 137. SIGMA 11.2 REPORT 9. SAMPLES 9

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	0	1	0	3	0	2	1	1	0	1	0	0	0
PCNT	0.00	11.11	0.00	33.33	0.00	22.22	11.11	11.11	0.00	11.11	0.00	0.00	0.00
ACUM	0.00	11.11	11.11	44.44	44.44	66.67	77.78	88.89	88.89	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 DISTILLATN INIT. BOILING PT. DEG F MEAN 142. SIGMA 6.6 REPORT 17. SAMPLES 17

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	0	0	0	0	3	5	6	1	1	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	17.65	29.41	35.29	5.88	5.88	5.88	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	17.65	47.06	82.35	88.24	94.12	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 DISTILLATN 10% RECOVERED, DEG F MEAN 195. SIGMA 16.5 REPORT 66. SAMPLES 66

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	18	7	5	11	12	8	1	0	0	0	3	1	0
PCNT	27.27	10.61	7.58	16.67	18.18	12.12	1.52	0.00	0.00	0.00	4.55	1.52	0.00
ACUM	27.27	37.88	45.45	62.12	80.30	92.42	93.94	93.94	93.94	93.94	98.48	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN 10% RECOVERED, DEG F MEAN 209. SIGMA 17.4 REPORT 169. SAMPLES 168

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	10	20	13	12	19	26	12	20	8	12	3	13	1
PCNT	5.95	11.90	7.74	7.14	11.31	15.48	7.14	11.90	4.76	7.14	1.79	7.74	.59
ACUM	5.95	17.86	25.60	32.74	44.05	59.52	66.67	78.57	83.33	90.48	92.26	100.00	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN 10% RECOVERED, DEG F MEAN 196. SIGMA 21.0 REPORT 251. SAMPLES 248

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	69	32	17	24	16	29	19	24	5	2	1	10	3
PCNT	27.82	12.90	6.85	9.68	6.45	11.69	7.66	9.68	2.02	.81	.40	4.03	1.20
ACUM	27.82	40.73	47.58	57.26	63.71	75.40	83.06	92.74	94.76	95.56	95.97	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN 10% RECOVERED, DEG F MEAN 202. SIGMA 16.6 REPORT 60. SAMPLES 60

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	9	8	4	8	7	5	6	4	4	2	1	2	0
PCNT	15.00	13.33	6.67	13.33	11.67	8.33	10.00	6.67	6.67	3.33	1.67	3.33	0.00
ACUM	15.00	28.33	35.00	48.33	60.00	68.33	78.33	85.00	91.67	95.00	96.67	100.00	PRCNT OF REPORTS

Table IV. Distillation, 10% Recovered

DISTRICT 5 DISTILLATN 10% RECOVERED, DEG F MEAN 206. SIGMA 12.2 REPORT 77. SAMPLES 76

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	3	3	7	13	12	16	5	4	6	5	2	0	1
PCNT	3.95	3.95	9.21	17.11	15.79	21.05	6.58	5.26	7.89	6.58	2.63	0.00	1.30
ACUM	3.95	7.89	17.11	34.21	50.00	71.05	77.63	82.89	90.79	97.37	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 DISTILLATN 10% RECOVERED, DEG F MEAN 218. SIGMA 14.1 REPORT 2. SAMPLES 2

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	0	0	0	0	0	1	0	0	0	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	50.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DISTILLATN 10% RECOVERED, DEG F MEAN 206. SIGMA 12.3 REPORT 9. SAMPLES 9

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	0	2	1	0	1	1	2	1	1	0	0	0	0
PCNT	0.00	22.22	11.11	0.00	11.11	11.11	22.22	11.11	11.11	0.00	0.00	0.00	0.00
ACUM	0.00	22.22	33.33	33.33	44.44	55.56	77.78	88.89	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DISTILLATN 10% RECOVERED, DEG F MEAN 201. SIGMA 14.5 REPORT 17. SAMPLES 16

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	2	3	3	1	1	3	1	0	0	2	0	0	1
PCNT	12.50	18.75	18.75	6.25	6.25	18.75	6.25	0.00	0.00	12.50	0.00	0.00	5.88
ACUM	12.50	31.25	50.00	56.25	62.50	81.25	87.50	87.50	87.50	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 DISTILLATN 20% RECOVERED, DEG F MEAN 210. SIGMA 17.1 REPORT 66. SAMPLES 65

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	1	8	7	5	21	18	1	3	6	1	0	1
PCNT	0.00	1.54	12.31	10.77	7.69	32.31	27.69	1.54	4.62	9.00	1.54	0.00	1.52
ACUM	0.00	1.54	13.85	24.62	32.31	64.62	92.31	93.85	98.46	98.46	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN 20% RECOVERED, DEG F MEAN 232. SIGMA 20.7 REPORT 169. SAMPLES 159

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	0	2	4	31	22	44	24	11	5	9	7	10
PCNT	0.00	0.00	1.26	2.52	19.50	13.84	27.67	15.09	6.92	3.14	5.66	4.40	5.92
ACUM	0.00	0.00	1.26	3.77	23.27	37.11	64.78	79.87	86.79	89.94	95.60	100.00	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN 20% RECOVERED, DEG F MEAN 226. SIGMA 22.5 REPORT 251. SAMPLES 250

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	0	21	29	44	35	26	48	21	11	11	4	1
PCNT	0.00	0.00	8.40	11.60	17.60	14.00	10.40	19.20	8.40	4.40	4.40	1.60	.40
ACUM	0.00	0.00	8.40	20.00	37.60	51.60	62.00	81.20	89.60	94.00	98.40	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN 20% RECOVERED, DEG F MEAN 229. SIGMA 23.3 REPORT 60. SAMPLES 60

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	0	0	9	11	13	7	4	7	4	1	4	0
PCNT	0.00	0.00	0.00	15.00	18.33	21.67	11.67	6.67	11.67	6.67	1.67	6.67	0.00
ACUM	0.00	0.00	0.00	15.00	33.33	55.00	66.67	73.33	85.00	91.67	93.33	100.00	PRCNT OF REPORTS

Table V. Distillation, 20% Recovered

DISTRICT 5 DISTILLATN 20% RECOVERED, DEG F MEAN 231. SIGMA 15.6 REPORT 77. SAMPLES 77

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	0	2	5	22	28	5	6	7	2	0	0
PCNT	0.00	0.00	0.00	2.60	6.49	28.57	36.36	6.49	7.79	9.09	2.60	0.00	0.00
ACUM	0.00	0.00	0.00	2.60	9.09	37.66	74.03	80.52	88.31	97.40	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 DISTILLATN 20% RECOVERED, DEG F MEAN 244. SIGMA 38.2 REPORT 2. SAMPLES 2

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	0	0	0	1	0	0	0	0	1	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	50.00	50.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DISTILLATN 20% RECOVERED, DEG F MEAN 230. SIGMA 12.0 REPORT 9. SAMPLES 9

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	0	0	0	4	2	2	1	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	44.44	22.22	22.22	11.11	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	44.44	66.67	88.89	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DISTILLATN 20% RECOVERED, DEG F MEAN 229. SIGMA 12.3 REPORT 17. SAMPLES 16

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	0	0	2	5	5	2	2	0	0	0	1
PCNT	0.00	0.00	0.00	0.00	12.50	31.25	31.25	12.50	12.50	0.00	0.00	0.00	5.88
ACUM	0.00	0.00	0.00	0.00	12.50	43.75	75.00	87.50	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 DISTILLATN 50% RECOVERED, DEG F MEAN 305. SIGMA 21.7 REPORT 66. SAMPLES 66

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	0	0	5	21	20	8	5	6	1	0	0
PCNT	0.00	0.00	0.00	0.00	7.58	31.82	30.30	12.12	7.58	9.09	1.52	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	7.58	39.39	69.70	81.82	89.39	98.48	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 DISTILLATN 50% RECOVERED, DEG F MEAN 285. SIGMA 22.8 REPORT 169. SAMPLES 157

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	1	0	26	56	36	17	11	8	0	2	0	12
PCNT	0.00	.64	0.00	16.56	35.67	22.93	10.83	7.01	5.10	0.00	1.27	0.00	7.10
ACUM	0.00	.64	.64	17.20	52.87	75.80	86.62	93.63	98.73	98.73	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 DISTILLATN 50% RECOVERED, DEG F MEAN 302. SIGMA 27.7 REPORT 251. SAMPLES 244

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	4	9	15	22	36	58	62	24	9	5	0	7
PCNT	0.00	1.64	3.69	6.15	9.02	14.75	23.77	25.41	9.84	3.69	2.05	0.00	2.79
ACUM	0.00	1.64	5.33	11.48	20.49	35.25	59.02	84.43	94.26	97.95	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 DISTILLATN 50% RECOVERED, DEG F MEAN 283. SIGMA 26.0 REPORT 60. SAMPLES 60

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	1	5	16	8	8	11	8	3	0	0	0	0
PCNT	0.00	1.67	8.33	26.67	13.33	13.33	18.33	13.33	5.00	0.00	0.00	0.00	0.00
ACUM	0.00	1.67	10.00	36.67	50.00	63.33	81.67	95.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table VI. Distillation, 50% Recovered

DISTRICT 5 DISTILLATN 50% RECOVERED, DEG F MEAN 289. SIGMA 28.9 REPORT 77. SAMPLES 76

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	2	12	27	7	9	7	7	5	0	0	1
PCNT	0.00	0.00	2.63	15.79	35.53	9.21	11.84	9.21	9.21	6.58	0.00	0.00	1.30
ACUM	0.00	0.00	2.63	18.42	53.95	63.16	75.00	84.21	93.42	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 DISTILLATN 50% RECOVERED, DEG F MEAN 328. SIGMA 24.7 REPORT 2. SAMPLES 2

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	0	0	0	0	1	0	0	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DISTILLATN 50% RECOVERED, DEG F MEAN 302. SIGMA 21.2 REPORT 9. SAMPLES 9

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	0	0	0	3	5	0	0	0	1	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	33.33	55.56	0.00	0.00	0.00	11.11	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	33.33	88.89	88.89	88.89	88.89	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DISTILLATN 50% RECOVERED, DEG F MEAN 320. SIGMA 21.8 REPORT 17. SAMPLES 17

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	0	0	1	0	5	4	5	1	1	0	0
PCNT	0.00	0.00	0.00	0.00	5.88	0.00	29.41	23.53	29.41	5.88	5.88	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	5.88	5.88	35.29	58.82	88.24	94.12	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 DISTILLATN 90% RECOVERED, DEG F MEAN 428. SIGMA 12.4 REPORT 66. SAMPLES 66

		GTR 320.	GTR 335.	GTR 350.	GTR 365.	GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.		
FREQ	0	0	0	0	0	3	1	20	34	8	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	4.55	1.52	30.30	51.52	12.12	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	4.55	6.06	36.36	87.88	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN 90% RECOVERED, DEG F MEAN 388. SIGMA 37.5 REPORT 169. SAMPLES 159

		GTR 320.	GTR 335.	GTR 350.	GTR 365.	GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.		
FREQ	8	8	12	9	27	26	22	25	23	3	2	0	10
PCNT	5.03	5.03	7.55	5.66	16.98	16.35	13.84	15.72	14.47	1.89	1.26	0.00	5.92
ACUM	5.03	10.06	17.61	23.27	40.25	56.60	70.44	86.16	100.63	102.52	103.77	103.77	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN 90% RECOVERED, DEG F MEAN 408. SIGMA 28.2 REPORT 251. SAMPLES 250

		GTR 320.	GTR 335.	GTR 350.	GTR 365.	GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.		
FREQ	3	4	8	8	10	31	46	71	50	19	0	0	1
PCNT	1.20	1.60	3.20	3.20	4.00	12.40	18.40	28.40	20.00	7.60	0.00	0.00	.40
ACUM	1.20	2.80	6.00	9.20	13.20	25.60	44.00	72.40	92.40	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN 90% RECOVERED, DEG F MEAN 384. SIGMA 31.3 REPORT 60. SAMPLES 60

		GTR 320.	GTR 335.	GTR 350.	GTR 365.	GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.		
FREQ	0	1	11	8	9	8	8	8	7	0	0	0	0
PCNT	0.00	1.67	18.33	13.33	15.00	13.33	13.33	13.33	11.67	0.00	0.00	0.00	0.00
ACUM	0.00	1.67	20.00	33.33	48.33	61.67	75.00	88.33	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table VII. Distillation, 90% Recovered

DISTRICT 5 DISTILLATN 90% RECOVERED, DEG F MEAN 394. SIGMA 40.7 REPORT 77. SAMPLES 77

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	0	4	13	11	5	1	8	3	15	10	1	0	0
PCNT	0.00	5.19	16.88	14.29	6.49	1.30	10.39	11.69	19.48	12.99	1.30	0.00	0.00
ACUM	0.00	5.19	22.08	36.36	42.86	44.16	54.55	66.23	85.71	98.70	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 DISTILLATN 90% RECOVERED, DEG F MEAN 413. SIGMA 2.8 REPORT 2. SAMPLES 2

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	0	0	0	0	0	0	0	2	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 DISTILLATN 90% RECOVERED, DEG F MEAN 408. SIGMA 8.7 REPORT 9. SAMPLES 9

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	0	0	0	0	0	0	5	4	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	55.56	44.44	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	55.56	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 DISTILLATN 90% RECOVERED, DEG F MEAN 418. SIGMA 19.8 REPORT 17. SAMPLES 17

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	0	0	0	0	1	3	1	4	7	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	5.88	17.65	5.88	23.53	41.18	5.88	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	5.88	23.53	29.41	52.94	94.12	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 DISTILLATN END POINT, DEG F MEAN 474. SIGMA 12.1 REPORT 66. SAMPLES 66

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	0	0	0	1	1	2	19	33	10	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	1.52	3.03	28.79	50.00	15.15	1.52	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	1.52	4.55	33.33	83.33	98.48	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 DISTILLATN END POINT, DEG F MEAN 450. SIGMA 38.0 REPORT 169. SAMPLES 168

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	6	9	19	14	9	24	24	35	22	6	0	0	1
PCNT	3.57	5.36	11.31	8.33	5.36	14.29	14.29	20.83	13.10	3.57	0.00	0.00	.59
ACUM	3.57	8.93	20.24	28.57	33.93	48.21	62.50	83.33	96.43	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 DISTILLATN END POINT, DEG F MEAN 463. SIGMA 27.8 REPORT 251. SAMPLES 250

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	3	5	10	4	15	39	66	54	44	10	0	0	1
PCNT	1.20	2.00	4.00	1.60	6.00	15.60	26.40	21.60	17.60	4.00	0.00	0.00	.40
ACUM	1.20	3.20	7.20	8.80	14.80	30.40	56.80	78.40	96.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 DISTILLATN END POINT, DEG F MEAN 451. SIGMA 33.8 REPORT 60. SAMPLES 60

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	1	1	6	13	3	6	8	9	11	2	0	0	0
PCNT	1.67	1.67	10.00	21.67	5.00	10.00	13.33	15.00	18.33	3.33	0.00	0.00	0.00
ACUM	1.67	3.33	13.33	35.00	40.00	50.00	63.33	78.33	96.67	100.00	100.00	100.00	PCNT OF REPORTS

Table VIII. Distillation, End Point

DISTRICT 5 DISTILLATN END POINT, DEG F MEAN 459. SIGMA 36.7 REPORT 77. SAMPLES 76

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	1	2	6	8	9	6	9	8	19	6	0	0	1
PCNT	1.32	2.63	7.89	10.53	11.84	7.89	11.84	10.53	25.00	10.53	0.00	0.00	1.30
ACUM	1.32	3.95	11.84	22.37	34.21	42.11	53.95	64.47	89.47	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 DISTILLATN END POINT, DEG F MEAN 447. SIGMA 4.2 REPORT 2. SAMPLES 2

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	0	0	0	0	0	2	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DISTILLATN END POINT, DEG F MEAN 465. SIGMA 8.6 REPORT 9. SAMPLES 8

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	0	0	0	0	0	1	5	2	0	0	0	0	1
PCNT	0.00	0.00	0.00	0.00	0.00	12.50	62.50	25.00	0.00	0.00	0.00	0.00	11.11
ACUM	0.00	0.00	0.00	0.00	0.00	12.50	75.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DISTILLATN END POINT, DEG F MEAN 471. SIGMA 16.1 REPORT 17. SAMPLES 17

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	0	0	0	0	0	2	9	0	6	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	11.76	52.94	0.00	35.29	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	11.76	64.71	64.71	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 GRAVITY, DEG API — MEAN 54.9 SIGMA 1.53 REPORT 66. SAMPLES 62

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	2	2	0	0	8	13	30	7	0	4
PCNT	0.00	0.00	0.00	3.23	3.23	0.00	0.00	12.90	20.97	48.39	11.29	0.00	6.06
ACUM	0.00	0.00	0.00	3.23	6.45	6.45	6.45	19.35	40.32	88.71	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 GRAVITY, DEG API — MEAN 54.5 SIGMA 1.74 REPORT 169. SAMPLES 156

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	8	13	9	27	30	33	36	0	13
PCNT	0.00	0.00	0.00	0.00	5.13	8.33	5.77	17.31	19.23	21.15	23.08	0.00	7.69
ACUM	0.00	0.00	0.00	0.00	5.13	13.46	19.23	36.54	55.77	76.92	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 GRAVITY, DEG API — MEAN 53.5 SIGMA 1.51 REPORT 251. SAMPLES 251

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	2	6	27	75	54	34	43	10	0	0
PCNT	0.00	0.00	0.00	.80	2.39	10.76	29.88	21.51	13.55	17.13	3.98	0.00	0.00
ACUM	0.00	0.00	0.00	.80	3.19	13.94	43.82	65.34	78.88	96.02	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 GRAVITY, DEG API — MEAN 54.5 SIGMA 1.56 REPORT 60. SAMPLES 59

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	1	1	10	13	11	9	14	0	1
PCNT	0.00	0.00	0.00	0.00	1.69	1.69	16.95	22.03	18.64	15.25	23.73	0.00	1.67
ACUM	0.00	0.00	0.00	0.00	1.69	3.39	20.34	42.37	61.02	76.27	100.00	100.00	PRCNT OF REPORTS

Table IX. Gravity, DEG API

DISTRICT 5 GRAVITY, DEG API — MEAN 52.4 SIGMA 2.49 REPORT 77. SAMPLES 72

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	2	4	5	2	5	8	5	20	16	3	2	0	5
PCNT	2.78	5.56	6.94	2.78	6.94	11.11	6.94	27.78	22.22	4.17	2.78	0.00	6.49
ACUM	2.78	8.33	15.28	18.06	25.00	36.11	43.06	70.83	93.06	97.22	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 GRAVITY, DEG API — MEAN 54.5 SIGMA 1.91 REPORT 2. SAMPLES 2

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	0	0	0	1	0	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 GRAVITY, DEG API — MEAN 55.9 SIGMA .86 REPORT 9. SAMPLES 9

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	0	0	0	1	0	0	8	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11	0.00	0.00	88.89	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11	11.11	11.11	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 GRAVITY, DEG API — MEAN 54.3 SIGMA 1.20 REPORT 17. SAMPLES 17

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	0	1	3	2	6	4	1	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	5.88	17.65	11.76	35.29	23.53	5.88	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	5.88	23.53	35.29	70.59	94.12	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .67 REPORT 66. SAMPLES 66

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	31	24	3	6	0	2	0	0	0	0	0	0
PCNT	0.00	46.97	36.36	4.55	9.09	0.00	3.03	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	46.97	83.33	87.88	96.97	96.97	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 EXISTENT GUM, MG/100ML MEAN .9 SIGMA .76 REPORT 169. SAMPLES 165

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	9	62	46	20	17	4	3	1	3	0	0	0	4
PCNT	5.45	37.58	27.88	12.12	10.30	2.42	1.82	.61	1.82	0.00	0.00	0.00	2.37
ACUM	5.45	43.03	70.91	83.03	93.33	95.76	97.58	98.18	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .60 REPORT 251. SAMPLES 223

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	16	110	65	16	9	3	3	0	0	0	1	0	28
PCNT	7.17	49.33	29.15	7.17	4.04	1.35	1.35	0.00	0.00	0.00	.45	0.00	11.16
ACUM	7.17	56.50	85.65	92.83	96.86	98.21	99.55	99.55	99.55	99.55	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .69 REPORT 60. SAMPLES 54

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	5	23	16	2	3	4	1	0	0	0	0	0	6
PCNT	9.26	42.59	29.63	3.70	5.56	7.41	1.85	0.00	0.00	0.00	0.00	0.00	10.00
ACUM	9.26	51.85	81.48	85.19	90.74	98.15	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table X. Existent Gum

DISTRICT 5 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .34 REPORT 77. SAMPLES 77

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	17	47	10	1	0	0	0	0	0	0	0	0
PCNT	2.60	22.08	61.04	12.99	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	2.60	24.68	85.71	98.70	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 EXISTENT GUM, MG/100ML MEAN 1.1 SIGMA .14 REPORT 2. SAMPLES 2

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	0	1	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 EXISTENT GUM, MG/100ML MEAN .9 SIGMA .32 REPORT 9. SAMPLES 9

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	1	7	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	11.11	77.78	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	11.11	88.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 EXISTENT GUM, MG/100ML MEAN 1.3 SIGMA [illegible] SAMPLES 13

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	0	3	7	2	0	1	0	0	0	0	0	4
PCNT	0.00	0.00	23.08	53.85	15.38	0.00	7.69	0.00	0.00	0.00	0.00	0.00	23.53
ACUM	0.00	0.00	23.08	76.92	92.31	92.31	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 TOTAL SULFUR, WEIGHT PERCENT MEAN .030 SIGMA .033 REPORT 66. SAMPLES 66

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	62	1	2	0	1	0	0	0	0	0	0	0
PCNT	0.00	93.94	1.52	3.03	0.00	1.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	93.94	95.45	98.48	98.48	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 TOTAL SULFUR, WEIGHT PERCENT MEAN .040 SIGMA .037 REPORT 169. SAMPLES 162

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	1	129	18	11	3	0	0	0	0	0	0	0	7
PCNT	.62	79.63	11.11	6.79	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14
ACUM	.62	80.25	91.36	98.15	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 TOTAL SULFUR, WEIGHT PERCENT MEAN .048 SIGMA .045 REPORT 251. SAMPLES 227

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	153	49	15	6	0	1	0	0	0	0	0	24
PCNT	0.00	67.40	21.59	7.05	2.64	0.00	.44	0.00	0.00	0.00	0.00	0.00	9.56
ACUM	0.00	67.40	88.99	96.92	99.56	99.56	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 TOTAL SULFUR, WEIGHT PERCENT MEAN .028 SIGMA .020 REPORT 60. SAMPLES 56

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	51	5	0	0	0	0	0	0	0	0	0	4
PCNT	0.00	91.07	8.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.67
ACUM	0.00	91.07	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table XI. Total Sulfur

DISTRICT 5 TOTAL SULFUR, WEIGHT PERCENT MEAN .049 SIGMA .060 REPORT 77. SAMPLES 61

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	49	5	0	5	1	1	0	0	0	0	0	16
PCNT	0.00	80.33	8.20	0.00	8.20	1.64	1.64	0.00	0.00	0.00	0.00	0.00	20.78
ACUM	0.00	80.33	88.52	88.52	96.72	98.36	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 TOTAL SULFUR, WEIGHT PERCENT MEAN .045 SIGMA .007 REPORT 2. SAMPLES 2

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	2	0	0	0	0	0	0	0	0	0	0	0
PCNT	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 TOTAL SULFUR, WEIGHT PERCENT MEAN .078 SIGMA .030 REPORT 9. SAMPLES 8

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	1	7	0	0	0	0	0	0	0	0	0	1
PCNT	0.00	12.50	87.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
ACUM	0.00	12.50	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 TOTAL SULFUR, WEIGHT PERCENT MEAN .034 SIGMA .023 REPORT 17. SAMPLES 15

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	14	1	0	0	0	0	0	0	0	0	0	2
PCNT	0.00	93.33	6.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.76
ACUM	0.00	93.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0003 SIGMA .00023 REPORT 66. SAMPLES 38

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	13	13	3	1	2	3	1	0	1	1	0	26
PCNT	0.00	34.21	34.21	7.89	2.63	5.26	7.89	2.63	0.00	2.63	2.63	0.00	42.42
ACUM	0.00	34.21	68.42	76.32	78.95	84.21	92.11	94.74	94.74	97.37	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0006 SIGMA .00026 REPORT 169. SAMPLES 79

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	5	6	7	7	15	13	4	8	5	9	0	90
PCNT	0.00	6.33	7.59	8.86	8.86	18.99	16.46	5.06	10.13	6.33	11.39	0.00	53.25
ACUM	0.00	6.33	13.92	22.78	31.65	50.63	67.09	72.15	82.28	88.61	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0004 SIGMA .00022 REPORT 251. SAMPLES 90

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	20	9	14	17	11	5	7	5	2	0	0	161
PCNT	0.00	22.22	10.00	15.56	18.89	12.22	5.56	7.78	5.56	2.22	0.00	0.00	64.14
ACUM	0.00	22.22	32.22	47.78	66.67	78.89	84.44	92.22	97.78	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0004 SIGMA .00022 REPORT 60. SAMPLES 13

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	1	3	4	3	1	0	0	0	0	1	0	47
PCNT	0.00	7.69	23.08	30.77	23.08	7.69	0.00	0.00	0.00	0.00	7.69	0.00	78.33
ACUM	0.00	7.69	30.77	61.54	84.62	92.31	92.31	92.31	92.31	92.31	100.00	100.00	PRCNT OF REPORTS

Table XII. Mercaptan Sulfur

DISTRICT 5 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0006 SIGMA .00035 REPORT 77. SAMPLES 54

	GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	2	6	16	3	2	2	0	0	0	21	0	23
PCNT	0.00	3.70	11.11	33.33	5.56	3.70	3.70	0.00	0.00	0.00	38.89	0.00	29.87
ACUM	0.00	3.70	14.81	48.15	53.70	57.41	61.11	61.11	61.11	61.11	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0010 SIGMA 0.00000 REPORT 2. SAMPLES 1

	GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	0	0	0	0	0	0	0	0	1	0	1
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	50.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0002 SIGMA .00007 REPORT 9. SAMPLES 2

	GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	1	1	0	0	0	0	0	0	0	0	7
PCNT	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.78
ACUM	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0001 SIGMA .00004 REPORT 17. SAMPLES 10

	GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	8	2	0	0	0	0	0	0	0	0	7
PCNT	0.00	80.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.18
ACUM	0.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .22 REPORT 66. SAMPLES 66

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	1	4	6	7	5	17	9	6	10	1	0	0
PCNT	0.00	1.52	6.06	9.09	10.61	7.58	25.76	13.64	9.09	15.15	1.52	0.00	0.00
ACUM	0.00	1.52	7.58	16.67	27.27	34.85	60.61	74.24	83.33	98.48	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .25 REPORT 169. SAMPLES 165

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	1	6	14	15	25	14	25	28	15	13	9	0	4
PCNT	.61	3.64	8.48	9.09	15.15	8.48	15.15	16.97	9.09	7.88	5.45	0.00	2.37
ACUM	.61	4.24	12.73	21.82	36.97	45.45	60.61	77.58	86.67	94.55	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 251. SAMPLES 245

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	2	10	13	11	19	28	38	48	34	29	13	0	6
PCNT	.82	4.08	5.31	4.49	7.76	11.43	15.51	19.59	13.88	11.84	5.31	0.00	2.39
ACUM	.82	4.90	10.20	14.69	22.45	33.88	49.39	68.98	82.86	94.69	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 60. SAMPLES 52

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	2	4	3	8	6	8	7	8	3	3	0	8
PCNT	0.00	3.85	7.69	5.77	15.38	11.54	15.38	13.46	15.38	5.77	5.77	0.00	13.33
ACUM	0.00	3.85	11.54	17.31	32.69	44.23	59.62	73.08	88.46	94.23	100.00	100.00	PCNT OF REPORTS

Table XIII. Reid Vapor Pressure

DISTRICT 5 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 77. SAMPLES 76

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	1	4	2	7	9	11	13	11	7	10	1	0	1
PCNT	1.32	5.26	2.63	9.21	11.84	14.47	17.11	14.47	9.21	13.16	1.32	0.00	1.30
ACUM	1.32	6.58	9.21	18.42	30.26	44.74	61.84	76.32	85.53	98.68	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 REID VAPOR PRESSURE,LBS MEAN 2.7 SIGMA .14 REPORT 2. SAMPLES 2

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	0	0	0	0	0	1	0	1	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .19 REPORT 9. SAMPLES 9

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	0	1	0	1	0	2	3	2	0	0	0	0
PCNT	0.00	0.00	11.11	0.00	11.11	0.00	22.22	33.33	22.22	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	11.11	11.11	22.22	22.22	44.44	77.78	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 REID VAPOR PRESSURE,LBS MEAN 2.5 SIGMA .17 REPORT 17. SAMPLES 14

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	0	1	4	3	2	3	2	1	0	0	0	3
PCNT	0.00	0.00	7.14	14.29	21.43	14.29	21.43	14.29	7.14	0.00	0.00	0.00	17.65
ACUM	0.00	0.00	7.14	21.43	42.86	57.14	78.57	92.86	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .1 REPORT 66. SAMPLES 66

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	0	1	3	6	15	33	8	0	0	0
PCNT	0.00	0.00	0.00	0.00	1.52	4.55	9.09	22.73	50.00	12.12	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	1.52	6.06	15.15	37.88	87.88	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .1 REPORT 169. SAMPLES 162

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	0	6	17	20	48	60	9	2	0	7
PCNT	0.00	0.00	0.00	0.00	3.70	10.49	12.35	29.63	37.04	5.56	1.23	0.00	4.14
ACUM	0.00	0.00	0.00	0.00	3.70	14.20	26.54	56.17	93.21	98.77	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.5 SIGMA .1 REPORT 251. SAMPLES 227

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	0	8	22	66	89	28	14	0	0	24
PCNT	0.00	0.00	0.00	0.00	3.52	9.69	29.07	39.21	12.33	6.17	0.00	0.00	9.56
ACUM	0.00	0.00	0.00	0.00	3.52	13.22	42.29	81.50	93.83	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.5 SIGMA .1 REPORT 60. SAMPLES 56

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	0	0	4	12	23	17	0	0	0	4
PCNT	0.00	0.00	0.00	0.00	0.00	7.14	21.43	41.07	30.36	0.00	0.00	0.00	6.67
ACUM	0.00	0.00	0.00	0.00	0.00	7.14	28.57	69.64	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XIV. Heat of Combustion

DISTRICT 5 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.4 SIGMA .1 REPORT 77. SAMPLES 61

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	1	6	13	15	12	8	4	0	0	0	16
PCNT	0.00	0.00	0.00	9.84	21.31	24.51	19.67	13.11	6.56	0.00	0.00	0.00	20.78
ACUM	0.00	0.00	0.00	9.84	31.15	60.66	80.33	93.44	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .1 REPORT 2. SAMPLES 2

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	0	0	0	0	0	2	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .0 REPORT 9. SAMPLES 8

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	0	0	0	0	0	1	0	0	0	1
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	11.11
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .0 REPORT 17. SAMPLES 15

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	0	0	0	0	11	4	0	0	0	2
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.33	26.67	0.00	0.00	0.00	11.76
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.33	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 AROMATIC CONTENT, VOLUME PERCENT MEAN 11.9 SIGMA 2.43 REPORT 66. SAMPLES 66

	GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	1	12	27	19	6	1	0	0	0
PCNT	0.00	0.00	0.00	1.52	18.18	40.91	28.79	9.09	1.52	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	1.52	19.70	60.61	89.39	98.48	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 AROMATIC CONTENT, VOLUME PERCENT MEAN 10.3 SIGMA 4.15 REPORT 169. SAMPLES 167

	GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	4	35	60	27	15	12	6	6	0	2
PCNT	0.00	0.00	2.40	20.96	35.93	16.17	8.98	7.19	3.59	4.79	0.00	1.18
ACUM	0.00	0.00	2.40	23.35	59.28	75.45	84.43	91.62	95.21	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 AROMATIC CONTENT, VOLUME PERCENT MEAN 11.8 SIGMA 2.74 REPORT 251. SAMPLES 230

	GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	1	0	76	74	43	28	6	1	0	21
PCNT	0.00	0.00	1.03	0.00	33.91	32.17	18.70	12.17	2.61	.43	0.00	8.37
ACUM	0.00	0.00	0.00	0.00	33.91	66.09	84.78	96.96	99.57	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 AROMATIC CONTENT, VOLUME PERCENT MEAN 10.5 SIGMA 3.40 REPORT 60. SAMPLES 60

	GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	8	26	11	5	10	0	0	0	0
PCNT	0.00	0.00	0.00	13.33	43.33	18.33	8.33	16.67	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	13.33	56.67	75.00	83.33	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XV. Aromatic Content

DISTRICT 5 AROMATIC CONTENT, VOLUME PERCENT MEAN 12.7 SIGMA 2.28 REPORT 77. SAMPLES 63

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	0	11	19	25	8	0	0	0	0	14
PCNT	0.00	0.00	0.00	0.00	17.46	30.16	39.68	12.70	0.00	0.00	0.00	0.00	18.18
ACUM	0.00	0.00	0.00	0.00	17.46	47.62	87.30	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 AROMATIC CONTENT, VOLUME PERCENT MEAN 14.4 SIGMA .76 REPORT 2. SAMPLES 2

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	0	0	0	2	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 AROMATIC CONTENT, VOLUME PERCENT MEAN 10.5 SIGMA 2.13 REPORT 9. SAMPLES 9

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	1	0	0	8	0	0	0	0	0	0	0
PCNT	0.00	0.00	11.11	0.00	0.00	88.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	11.11	11.11	11.11	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 AROMATIC CONTENT, VOLUME PERCENT MEAN 12.3 SIGMA 1.37 REPORT 17. SAMPLES 17

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	0	2	7	8	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	11.76	41.18	47.06	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	11.76	52.94	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 OLEFIN CONTENT, VOLUME PERCENT MEAN .9 SIGMA .31 REPORT 66. SAMPLES 66

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	9	44	11	2	0	0	0	0	0	0	0	0
PCNT	0.00	13.64	66.67	16.67	3.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	13.64	80.30	96.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 OLEFIN CONTENT, VOLUME PERCENT MEAN .9 SIGMA .46 REPORT 169. SAMPLES 166

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	44	73	32	10	4	0	1	0	0	0	0	3
PCNT	1.20	26.51	43.98	19.28	6.02	2.41	0.00	.60	0.00	0.00	0.00	0.00	1.78
ACUM	1.20	27.71	71.69	90.96	96.99	99.40	99.40	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 OLEFIN CONTENT, VOLUME PERCENT MEAN .6 SIGMA .44 REPORT 251. SAMPLES 228

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	63	136	15	7	2	2	1	0	0	0	0	23
PCNT	.88	27.63	59.65	6.58	3.07	.88	.88	.44	0.00	0.00	0.00	0.00	9.16
ACUM	.88	28.51	88.16	94.74	97.81	98.68	99.56	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 OLEFIN CONTENT, VOLUME PERCENT MEAN .6 SIGMA .24 REPORT 60. SAMPLES 55

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	20	32	1	0	0	0	0	0	0	0	0	5
PCNT	3.64	36.36	58.18	1.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.33
ACUM	3.64	40.00	98.18	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XVI. Olefin Content

DISTRICT 5 OLEFIN CONTENT, VOLUME PERCENT MEAN .9 SIGMA .32 REPORT 77. SAMPLES 62

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	13	40	6	3	0	0	0	0	0	0	0	15
PCNT	0.00	20.97	64.52	9.68	4.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.48
ACUM	0.00	20.97	85.48	95.16	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 OLEFIN CONTENT, VOLUME PERCENT MEAN .4 SIGMA 0.00 REPORT 2. SAMPLES 1

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	1	0	0	0	0	0	0	0	0	0	0	1
PCNT	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00
ACUM	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 OLEFIN CONTENT, VOLUME PERCENT MEAN .5 SIGMA .20 REPORT 9. SAMPLES 9

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	8	1	0	0	0	0	0	0	0	0	0	0
PCNT	0.00	88.89	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	88.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 OLEFIN CONTENT, VOLUME PERCENT MEAN .5 SIGMA .47 REPORT 17. SAMPLES 17

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	13	2	2	0	0	0	0	0	0	0	0	0
PCNT	0.00	76.47	11.76	11.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	76.47	88.24	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 PERCENT HYDROGEN (CALCD) MEAN 14.45 SIGMA .19 REPORT 66. SAMPLES 62

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	4	4	9	10	32	3	0	0	0	4
PCNT	0.00	0.00	0.00	6.45	6.45	14.52	16.13	51.61	4.84	0.00	0.00	0.00	6.06
ACUM	0.00	0.00	0.00	6.45	12.90	27.42	43.55	95.16	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 PERCENT HYDROGEN (CALCD) MEAN 14.44 SIGMA .27 REPORT 169. SAMPLES 142

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	3	3	11	15	8	13	58	23	0	0	0	27
PCNT	0.00	2.11	2.82	7.75	10.56	5.63	9.15	40.85	20.42	0.00	0.00	0.00	15.98
ACUM	0.00	2.11	5.63	13.38	23.94	29.58	38.73	79.58	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 PERCENT HYDROGEN (CALCD) MEAN 14.32 SIGMA .17 REPORT 251. SAMPLES 223

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	5	14	28	64	90	15	7	0	0	0	28
PCNT	0.00	0.00	2.24	6.28	12.56	28.70	40.36	6.73	3.14	0.00	0.00	0.00	11.16
ACUM	0.00	0.00	2.24	8.52	21.08	49.78	90.13	96.86	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 PERCENT HYDROGEN (CALCD) MEAN 14.40 SIGMA .22 REPORT 60. SAMPLES 59

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	3	10	10	9	23	4	0	0	0	1
PCNT	0.00	0.00	0.00	5.08	16.95	16.95	15.25	38.98	6.78	0.00	0.00	0.00	1.67
ACUM	0.00	0.00	0.00	5.08	22.03	38.98	54.24	93.22	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table XVII. Percent Hydrogen

DISTRICT 5 PERCNT HYDROGEN (CALCD) MEAN 14.10 SIGMA .22 REPORT 77. SAMPLES 59

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	11	5	12	18	10	3	0	0	0	0	16
PCNT	0.00	0.00	18.64	8.47	20.34	30.51	16.95	5.08	0.00	0.00	0.00	0.00	23.38
ACUM	0.00	0.00	18.64	27.12	47.46	77.97	94.92	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 PERCNT HYDROGEN (CALCD) MEAN 14.34 SIGMA .13 REPORT 2. SAMPLES 2

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	0	0	1	1	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 PERCNT HYDROGEN (CALCD) MEAN 14.56 SIGMA .05 REPORT 9. SAMPLES 9

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	0	0	0	0	8	1	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.89	11.11	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.89	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 PERCNT HYDROGEN (CALCD) MEAN 14.40 SIGMA .07 REPORT 17. SAMPLES 16

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	0	0	3	13	0	0	0	0	0	1
PCNT	0.00	0.00	0.00	0.00	0.00	18.75	81.25	0.00	0.00	0.00	0.00	0.00	5.88
ACUM	0.00	0.00	0.00	0.00	0.00	18.75	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 SMOKE POINT — MEAN 27.4 SIGMA 3.23 REPORT 66. SAMPLES 66

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	1	1	17	7	7	22	10	1	0	0	0	0
PCNT	0.00	1.52	1.52	25.76	10.61	10.61	33.33	15.15	1.52	0.00	0.00	0.00	0.00
ACUM	0.00	1.52	3.03	28.79	39.39	50.00	83.33	98.48	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 SMOKE POINT — MEAN 28.3 SIGMA 3.16 REPORT 169. SAMPLES 165

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	0	8	19	21	22	39	49	4	3	0	0	4
PCNT	0.00	0.00	4.85	11.52	12.73	13.33	23.64	29.70	2.42	1.82	0.00	0.00	2.37
ACUM	0.00	0.00	4.85	16.36	29.09	42.42	66.06	95.76	98.18	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 SMOKE POINT — MEAN 27.9 SIGMA 3.21 REPORT 251. SAMPLES 195

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	0	3	19	44	69	13	25	13	9	0	0	56
PCNT	0.00	0.00	1.54	9.74	22.56	35.38	6.67	12.82	6.67	4.62	0.00	0.00	22.31
ACUM	0.00	0.00	1.54	11.28	33.85	69.23	75.90	88.72	95.38	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 SMOKE POINT — MEAN 28.1 SIGMA 3.23 REPORT 60. SAMPLES 58

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	0	0	3	16	13	11	9	1	2	3	0	2
PCNT	0.00	0.00	0.00	5.17	27.59	22.41	18.97	15.52	1.72	3.45	5.17	0.00	3.33
ACUM	0.00	0.00	0.00	5.17	32.76	55.17	74.14	89.66	91.38	94.83	100.00	100.00	PRCNT OF REPORTS

Table XVIII. Smoke Point

DISTRICT 5 SMOKE POINT — MEAN 24.7 SIGMA 3.04 REPORT 77. SAMPLES 62

	LEQ 18.0	GTR 18.0 LEQ 20.0	GTR 20.0 LEQ 22.0	GTR 22.0 LEQ 24.0	GTR 24.0 LEQ 26.0	GTR 26.0 LEQ 28.0	GTR 28.0 LEQ 30.0	GTR 30.0 LEQ 32.0	GTR 32.0 LEQ 34.0	GTR 34.0 LEQ 36.0	GTR 36.0 LEQ 38.0	GTR 38.0	MISSING VALUES
FREQ	0	1	12	17	17	9	5	0	0	0	1	0	15
PCNT	0.00	1.61	19.35	27.42	27.42	14.52	8.06	0.00	0.00	0.00	1.61	0.00	19.48
ACUM	0.00	1.61	20.97	48.39	75.81	90.32	98.39	98.39	98.39	98.39	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 SMOKE POINT — MEAN 25.5 SIGMA .71 REPORT 2. SAMPLES 2

	LEQ 18.0	GTR 18.0 LEQ 20.0	GTR 20.0 LEQ 22.0	GTR 22.0 LEQ 24.0	GTR 24.0 LEQ 26.0	GTR 26.0 LEQ 28.0	GTR 28.0 LEQ 30.0	GTR 30.0 LEQ 32.0	GTR 32.0 LEQ 34.0	GTR 34.0 LEQ 36.0	GTR 36.0 LEQ 38.0	GTR 38.0	MISSING VALUES
FREQ	0	0	0	0	2	0	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 SMOKE POINT — MEAN 27.8 SIGMA .50 REPORT 9. SAMPLES 4

	LEQ 18.0	GTR 18.0 LEQ 20.0	GTR 20.0 LEQ 22.0	GTR 22.0 LEQ 24.0	GTR 24.0 LEQ 26.0	GTR 26.0 LEQ 28.0	GTR 28.0 LEQ 30.0	GTR 30.0 LEQ 32.0	GTR 32.0 LEQ 34.0	GTR 34.0 LEQ 36.0	GTR 36.0 LEQ 38.0	GTR 38.0	MISSING VALUES
FREQ	0	0	0	0	0	4	0	0	0	0	0	0	5
PCNT	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	55.56
ACUM	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 SMOKE POINT — MEAN 25.8 SIGMA .44 REPORT 17. SAMPLES 17

	LEQ 18.0	GTR 18.0 LEQ 20.0	GTR 20.0 LEQ 22.0	GTR 22.0 LEQ 24.0	GTR 24.0 LEQ 26.0	GTR 26.0 LEQ 28.0	GTR 28.0 LEQ 30.0	GTR 30.0 LEQ 32.0	GTR 32.0 LEQ 34.0	GTR 34.0 LEQ 36.0	GTR 36.0 LEQ 38.0	GTR 38.0	MISSING VALUES
FREQ	0	0	0	0	17	0	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 WATER SEPARATION INDEX MODIFIED MEAN 94. SIGMA 6.0 REPORT 66. SAMPLES 66

		GTR 70. LEQ 70.	GTR 73. LEQ 73.	GTR 76. LEQ 76.	GTR 79. LEQ 79.	GTR 82. LEQ 82.	GTR 85. LEQ 85.	GTR 88. LEQ 88.	GTR 91. LEQ 91.	GTR 94. LEQ 94.	GTR 97. LEQ 97.	GTR 100. LEQ 100.	MISSING VALUES
FREQ	0	0	2	1	2	1	2	6	12	15	25	0	0
PCNT	0.00	0.00	3.03	1.52	3.03	1.52	3.03	9.09	18.18	22.73	37.86	0.00	0.00
ACUM	0.00	0.00	3.03	4.55	7.58	9.09	12.12	21.21	39.39	62.12	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 WATER SEPARATION INDEX MODIFIED MEAN 89. SIGMA 7.6 REPORT 169. SAMPLES 167

		GTR 70. LEQ 70.	GTR 73. LEQ 73.	GTR 76. LEQ 76.	GTR 79. LEQ 79.	GTR 82. LEQ 82.	GTR 85. LEQ 85.	GTR 88. LEQ 88.	GTR 91. LEQ 91.	GTR 94. LEQ 94.	GTR 97. LEQ 97.	GTR 100. LEQ 100.	MISSING VALUES
FREQ	0	3	11	9	16	16	17	17	28	35	15	0	2
PCNT	0.00	1.80	6.59	5.39	9.58	9.58	10.18	10.18	16.77	20.96	8.98	0.00	1.18
ACUM	0.00	1.80	8.38	13.77	23.35	32.93	43.11	53.29	70.06	91.02	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 WATER SEPARATION INDEX MODIFIED MEAN 89. SIGMA 6.9 REPORT 251. SAMPLES 246

		GTR 70. LEQ 70.	GTR 73. LEQ 73.	GTR 76. LEQ 76.	GTR 79. LEQ 79.	GTR 82. LEQ 82.	GTR 85. LEQ 85.	GTR 88. LEQ 88.	GTR 91. LEQ 91.	GTR 94. LEQ 94.	GTR 97. LEQ 97.	GTR 100. LEQ 100.	MISSING VALUES
FREQ	0	4	7	22	22	17	33	38	47	31	25	0	5
PCNT	0.00	1.63	2.85	8.94	8.94	6.91	13.41	15.45	19.11	12.60	10.16	0.00	1.99
ACUM	0.00	1.63	4.47	13.41	22.36	29.27	42.68	58.13	77.24	89.84	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 WATER SEPARATION INDEX MODIFIED MEAN 88. SIGMA 7.6 REPORT 60. SAMPLES 60

		GTR 70. LEQ 70.	GTR 73. LEQ 73.	GTR 76. LEQ 76.	GTR 79. LEQ 79.	GTR 82. LEQ 82.	GTR 85. LEQ 85.	GTR 88. LEQ 88.	GTR 91. LEQ 91.	GTR 94. LEQ 94.	GTR 97. LEQ 97.	GTR 100. LEQ 100.	MISSING VALUES
FREQ	0	1	4	2	8	3	16	4	5	7	10	0	0
PCNT	0.00	1.67	6.67	3.33	13.33	5.00	26.67	6.67	8.33	11.67	16.67	0.00	0.00
ACUM	0.00	1.67	8.33	11.67	25.00	30.00	56.67	63.33	71.67	83.33	100.00	100.00	PRCNT OF REPORTS

Table XIX. Water Separation Index, Modified

DISTRICT 5 WATER SEPARATION INDEX MODIFIED MEAN 92. SIGMA 5.6 REPORT 77. SAMPLES 75

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	0	1	1	5	2	10	12	18	16	10	0	2
PCNT	0.00	0.00	1.33	1.33	6.67	2.67	13.33	16.00	24.00	21.33	13.33	0.00	2.60
ACUM	0.00	0.00	1.33	2.67	9.33	12.00	25.33	41.33	65.33	86.67	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 WATER SEPARATION INDEX MODIFIED MEAN 86. SIGMA 1.4 REPORT 2. SAMPLES 2

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	0	0	0	0	1	1	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 WATER SEPARATION INDEX MODIFIED MEAN 87. SIGMA 4.9 REPORT 9. SAMPLES 9

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	0	0	0	1	4	1	2	0	0	1	0	0
PCNT	0.00	0.00	0.00	0.00	11.11	44.44	11.11	22.22	0.00	0.00	11.11	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	11.11	55.56	66.67	88.89	88.89	88.89	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 WATER SEPARATION INDEX MODIFIED MEAN 87. SIGMA 5.9 REPORT 17. SAMPLES 17

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	1	2	3	0	2	0	1	3	3	2	0	0
PCNT	0.00	5.88	11.76	17.65	0.00	11.76	0.00	5.88	17.65	17.65	11.76	0.00	0.00
ACUM	0.00	5.88	17.65	35.29	35.29	47.06	47.06	52.94	70.59	88.24	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 PARTICULATE CONTAMINATE, MG/LITER MEAN .46 SIGMA .26 REPORT 66. SAMPLES 66

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	5	11	7	10	6	9	3	9	5	1	0	0
PCNT	0.00	7.58	16.67	10.61	15.15	9.09	13.64	4.55	13.64	7.58	1.52	0.00	0.00
ACUM	0.00	7.58	24.24	34.85	50.00	59.09	72.73	77.27	90.91	98.48	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 PARTICULATE CONTAMINATE, MG/LITER MEAN .44 SIGMA .24 REPORT 169. SAMPLES 163

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	20	24	22	28	17	21	10	7	9	5	0	6
PCNT	0.00	12.27	14.72	13.50	17.18	10.43	12.88	6.13	4.29	5.52	3.07	0.00	3.55
ACUM	0.00	12.27	26.99	40.49	57.67	68.10	80.98	87.12	91.41	96.93	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 PARTICULATE CONTAMINATE, MG/LITER MEAN .30 SIGMA .22 REPORT 251. SAMPLES 235

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	9	60	50	36	34	12	9	5	14	6	0	0	16
PCNT	3.83	25.53	21.28	15.32	14.47	5.11	3.83	2.13	5.96	2.55	0.00	0.00	6.37
ACUM	3.83	29.36	50.64	65.96	80.43	85.53	89.36	91.49	97.45	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 PARTICULATE CONTAMINATE, MG/LITER MEAN .32 SIGMA .21 REPORT 60. SAMPLES 58

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	1	9	18	7	8	5	3	4	1	1	0	0	2
PCNT	1.72	15.52	32.76	12.07	13.79	8.62	5.17	6.90	1.72	1.72	0.00	0.00	3.33
ACUM	1.72	17.24	50.00	62.07	75.86	84.48	89.66	96.55	98.28	100.00	100.00	100.00	PCNT OF REPORTS

Table XX. Particulate Contaminate

DISTRICT 5 PARTICULATE CONTAMINATE, MG/LITER MEAN .37 SIGMA .23 REPORT 77. SAMPLES 76

		GTR 0.00 LEQ 0.00	GTR .10 LEQ .10	GTR .20 LEQ .20	GTR .30 LEQ .30	GTR .40 LEQ .40	GTR .50 LEQ .50	GTR .60 LEQ .60	GTR .70 LEQ .70	GTR .80 LEQ .80	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	12	12	18	12	8	2	4	4	2	2	0	1
PCNT	0.00	15.79	15.79	23.68	15.79	10.53	2.63	5.26	5.26	2.63	2.63	0.00	1.30
ACUM	0.00	15.79	31.58	55.26	71.05	81.58	84.21	89.47	94.74	97.37	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 PARTICULATE CONTAMINATE, MG/LITER MEAN .80 SIGMA 0.00 REPORT 2. SAMPLES 2

		GTR 0.00 LEQ 0.00	GTR .10 LEQ .10	GTR .20 LEQ .20	GTR .30 LEQ .30	GTR .40 LEQ .40	GTR .50 LEQ .50	GTR .60 LEQ .60	GTR .70 LEQ .70	GTR .80 LEQ .80	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	0	0	0	0	0	0	0	2	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 PARTICULATE CONTAMINATE, MG/LITER MEAN .35 SIGMA .26 REPORT 9. SAMPLES 8

		GTR 0.00 LEQ 0.00	GTR .10 LEQ .10	GTR .20 LEQ .20	GTR .30 LEQ .30	GTR .40 LEQ .40	GTR .50 LEQ .50	GTR .60 LEQ .60	GTR .70 LEQ .70	GTR .80 LEQ .80	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	3	0	2	0	1	0	2	0	0	0	0	1
PCNT	0.00	37.50	0.00	25.00	0.00	12.50	0.00	25.00	0.00	0.00	0.00	0.00	11.11
ACUM	0.00	37.50	37.50	62.50	62.50	75.00	75.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 PARTICULATE CONTAMINATE, MG/LITER MEAN .45 SIGMA .25 REPORT 17. SAMPLES 17

		GTR 0.00 LEQ 0.00	GTR .10 LEQ .10	GTR .20 LEQ .20	GTR .30 LEQ .30	GTR .40 LEQ .40	GTR .50 LEQ .50	GTR .60 LEQ .60	GTR .70 LEQ .70	GTR .80 LEQ .80	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	0	4	1	3	1	5	1	0	1	1	0	0
PCNT	0.00	0.00	23.53	5.88	17.65	5.88	29.41	5.88	0.00	5.88	5.88	0.00	0.00
ACUM	0.00	0.00	23.53	29.41	47.06	52.94	82.35	88.24	88.24	94.12	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 ACID NUMBER, MG KOH/GRAM — MEAN .004 SIGMA .0028 REPORT 66. SAMPLES 61

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	0	32	11	3	3	3	2	1	0	0	0	0	5
PCNT	0.00	52.46	18.03	14.75	4.92	4.92	3.28	1.64	0.00	0.00	0.00	0.00	7.58
ACUM	0.00	52.46	70.49	85.25	90.16	95.08	98.36	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 ACID NUMBER, MG KOH/GRAM — MEAN .006 SIGMA .0028 REPORT 169. SAMPLES 162

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	0	14	40	37	39	23	5	4	0	0	0	0	7
PCNT	0.00	8.64	24.69	22.84	24.07	14.20	3.09	2.47	0.00	0.00	0.00	0.00	4.14
ACUM	0.00	8.64	33.33	56.17	80.25	94.44	97.53	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 ACID NUMBER, MG KOH/GRAM — MEAN .006 SIGMA .0026 REPORT 251. SAMPLES 227

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	2	25	45	78	47	20	6	2	1	0	0	0	24
PCNT	.88	11.01	19.82	34.80	20.70	8.81	2.64	.88	.44	0.00	0.00	0.00	9.56
ACUM	.88	11.89	31.72	66.52	87.22	96.04	98.68	99.56	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 ACID NUMBER, MG KOH/GRAM — MEAN .006 SIGMA .0028 REPORT 60. SAMPLES 60

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	0	6	11	20	10	11	1	0	1	0	0	0	0
PCNT	0.00	10.00	18.33	33.33	16.67	18.33	1.67	0.00	1.67	0.00	0.00	0.00	0.00
ACUM	0.00	10.00	28.33	61.67	78.33	96.67	98.33	98.33	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XXI. Acid Number

DISTRICT 5 ACID NUMBER, MG KOH/GRAM — MEAN .007 SIGMA .0030 REPORT 77. SAMPLES 62

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	5	3	21	15	10	4	2	0	0	0	0	15
PCNT	0.00	8.06	4.52	32.26	19.35	16.13	6.45	3.23	0.00	0.00	0.00	0.00	19.48
ACUM	0.00	8.06	22.58	54.84	74.19	90.32	96.77	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 ACID NUMBER, MG KOH/GRAM — MEAN .003 SIGMA .0007 REPORT 2. SAMPLES 2

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	1	1	0	0	0	0	0	0	0	0	0	0
PCNT	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 ACID NUMBER, MG KOH/GRAM — MEAN .003 SIGMA .0011 REPORT 9. SAMPLES 9

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	7	1	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	77.78	11.11	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	77.78	88.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 ACID NUMBER, MG KOH/GRAM — MEAN .005 SIGMA .0024 REPORT 17. SAMPLES 16

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	5	2	4	4	1	0	0	0	0	0	0	1
PCNT	0.00	31.25	12.50	25.00	25.00	6.25	0.00	0.00	0.00	0.00	0.00	0.00	5.88
ACUM	0.00	31.25	43.75	68.75	93.75	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 FILTRATION TIME, 1 GALLON, MIN MEAN 5.7 SIGMA 2.2 REPORT 66. SAMPLES 65

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	3	9	30	11	4	1	0	3	2	0	2	1
PCNT	0.00	4.62	13.85	46.15	16.92	6.15	1.54	0.00	4.62	3.08	0.00	3.08	1.52
ACUM	0.00	4.62	18.46	64.62	81.54	87.69	89.23	89.23	93.85	96.92	96.92	100.00	PRCNT OF REPORTS

DISTRICT 2 FILTRATION TIME, 1 GALLON, MIN MEAN 5.3 SIGMA 2.5 REPORT 169. SAMPLES 161

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	26	44	37	17	16	6	1	4	3	1	6	8
PCNT	0.00	16.15	27.33	22.98	10.56	9.94	3.73	.62	2.48	1.86	.62	3.73	4.73
ACUM	0.00	16.15	43.48	66.46	77.02	86.96	90.68	91.30	93.79	95.65	96.27	100.00	PRCNT OF REPORTS

DISTRICT 3 FILTRATION TIME, 1 GALLON, MIN MEAN 5.0 SIGMA 2.0 REPORT 251. SAMPLES 248

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	2	35	83	63	27	18	7	4	0	2	5	2	3
PCNT	.81	14.11	33.47	25.40	10.89	7.26	2.82	1.61	0.00	.81	2.02	.81	1.20
ACUM	.81	14.92	48.39	73.79	84.68	91.94	94.76	96.37	96.37	97.18	99.19	100.00	PRCNT OF REPORTS

DISTRICT 4 FILTRATION TIME, 1 GALLON, MIN MEAN 5.4 SIGMA 1.5 REPORT 60. SAMPLES 57

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	2	11	24	8	6	5	0	0	0	1	0	3
PCNT	0.00	3.51	19.30	42.11	14.04	10.53	8.77	0.00	0.00	0.00	1.75	0.00	5.00
ACUM	0.00	3.51	22.81	64.91	78.95	89.47	98.25	98.25	98.25	98.25	100.00	100.00	PRCNT OF REPORTS

Table XXII. Filtration Time

DISTRICT 5 FILTRATION TIME, 1 GALLON, MIN MEAN 4.3 SIGMA 1.6 REPORT 77. SAMPLES 72

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	2	20	18	24	5	2	0	0	0	0	0	1	5
PCNT	2.78	27.78	25.00	33.33	6.94	2.78	0.00	0.00	0.00	0.00	0.00	1.39	6.49
ACUM	2.78	30.56	55.56	88.89	95.83	98.61	98.61	98.61	98.61	98.61	98.61	100.00	PRCNT OF REPORTS

DISTRICT 6 FILTRATION TIME, 1 GALLON, MIN MEAN 7.0 SIGMA 0.0 REPORT 2. SAMPLES 2

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	0	0	0	0	2	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 FILTRATION TIME, 1 GALLON, MIN MEAN 5.2 SIGMA 2.9 REPORT 9. SAMPLES 6

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	0	5	0	0	0	0	0	0	1	0	0	3
PCNT	0.00	0.00	83.33	0.00	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	33.33
ACUM	0.00	0.00	83.33	83.33	83.33	83.33	83.33	83.33	83.33	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 FILTRATION TIME, 1 GALLON, MIN MEAN 5.8 SIGMA 1.8 REPORT 17. SAMPLES 16

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	2	3	2	4	0	5	0	0	0	0	0	1
PCNT	0.00	12.50	18.75	12.50	25.00	0.00	31.25	0.00	0.00	0.00	0.00	0.00	5.88
ACUM	0.00	12.50	31.25	43.75	68.75	68.75	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 DELTA P IN MM OF HG MEAN .3 SIGMA .88 REPORT 66. SAMPLES 51

		GTR 0.0	GTR 1.0	GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	MISSING VALUES
	LEQ 0.0	LEQ 1.0	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0		
FREQ	44	3	2	1	0	1	0	0	0	0	0	0	15
PCNT	86.27	5.88	3.92	1.96	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	22.73
ACUM	86.27	92.16	96.08	98.04	98.04	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 DELTA P IN MM OF HG MEAN .4 SIGMA 1.28 REPORT 169. SAMPLES 135

		GTR 0.0	GTR 1.0	GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	MISSING VALUES
	LEQ 0.0	LEQ 1.0	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0		
FREQ	107	19	5	0	1	1	0	0	1	0	1	0	34
PCNT	79.26	14.07	3.70	0.00	.74	.74	0.00	0.00	.74	0.00	.74	0.00	20.12
ACUM	79.26	93.33	97.04	97.04	97.78	98.52	98.52	98.52	99.26	99.26	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 DELTA P IN MM OF HG MEAN .2 SIGMA .41 REPORT 251. SAMPLES 213

		GTR 0.0	GTR 1.0	GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	MISSING VALUES
	LEQ 0.0	LEQ 1.0	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0		
FREQ	159	47	7	0	0	0	0	0	0	0	0	0	38
PCNT	74.65	22.07	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.14
ACUM	74.65	96.71	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 DELTA P IN MM OF HG MEAN .2 SIGMA .67 REPORT 60. SAMPLES 58

		GTR 0.0	GTR 1.0	GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	MISSING VALUES
	LEQ 0.0	LEQ 1.0	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0		
FREQ	50	4	3	0	1	0	0	0	0	0	0	0	2
PCNT	86.21	6.90	5.17	0.00	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.33
ACUM	86.21	93.10	98.28	98.28	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table XXIII. Thermal Stability, ΔP

DISTRICT 5 DELTA P IN MM OF HG MEAN .2 SIGMA .67 REPORT 77. SAMPLES 60

	LEQ 0.0	GTR 0.0 LEQ 1.0	GTR 1.0 LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0	MISSING VALUES
FREQ	53	2	4	0	1	0	0	0	0	0	0	0	17
PCNT	88.33	3.33	6.67	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.08
ACUM	88.33	91.67	98.33	98.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DELTA P IN MM OF HG MEAN .6 SIGMA 1.33 REPORT 9. SAMPLES 5

	LEQ 0.0	GTR 0.0 LEQ 1.0	GTR 1.0 LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0	MISSING VALUES
FREQ	3	1	0	1	0	0	0	0	0	0	0	0	4
PCNT	60.00	20.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.44
ACUM	60.00	80.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DELTA P IN MM OF HG MEAN .1 SIGMA .04 REPORT 17. SAMPLES 13

	LEQ 0.0	GTR 0.0 LEQ 1.0	GTR 1.0 LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0	MISSING VALUES
FREQ	4	9	0	0	0	0	0	0	0	0	0	0	4
PCNT	30.77	69.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.53
ACUM	30.77	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 VISUAL RATING — MEAN .7 SIGMA .50 REPORT 66. SAMPLES 51

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	17	2	30	0	1	0	0	0	0	0	0	0	15
PCNT	33.33	5.88	58.82	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.73
ACUM	33.33	39.22	98.04	98.04	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 VISUAL RATING — MEAN .9 SIGMA .60 REPORT 169. SAMPLES 135

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	30	5	80	7	11	1	1	0	0	0	0	0	34
PCNT	22.22	3.70	59.26	5.19	8.15	.74	.74	0.00	0.00	0.00	0.00	0.00	20.12
ACUM	22.22	25.93	85.19	90.37	98.52	99.26	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 VISUAL RATING — MEAN .8 SIGMA .48 REPORT 251. SAMPLES 215

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	48	3	155	1	8	0	0	0	0	0	0	0	36
PCNT	22.33	1.40	72.09	.47	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.34
ACUM	22.33	23.72	95.81	96.28	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 VISUAL RATING — MEAN .5 SIGMA .52 REPORT 60. SAMPLES 58

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	30	1	26	1	0	0	0	0	0	0	0	0	2
PCNT	51.72	1.72	44.83	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.33
ACUM	51.72	53.45	98.28	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table XXIV. Thermal Stability Tube Color Code

DISTRICT 5 VISUAL RATING MEAN .7 SIGMA .45 REPORT 77. SAMPLES 60

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	16	2	41	1	0	0	0	0	0	0	0	0	17
PCNT	26.67	3.33	68.33	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.08
ACUM	26.67	30.00	98.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 VISUAL RATING MEAN 1.0 SIGMA 0.00 REPORT 9. SAMPLES 5

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	0	5	0	0	0	0	0	0	0	0	0	4
PCNT	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.44
ACUM	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 VISUAL RATING MEAN .8 SIGMA .38 REPORT 17. SAMPLES 13

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	0	11	0	0	0	0	0	0	0	0	0	4
PCNT	15.38	0.00	84.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.53
ACUM	15.38	15.38	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XXV. 1978 Totals (All Properties)

1978 TOTALS DISTILLATN INIT. BOILING PT, DEG F MEAN 138. SIGMA 13.1 REPORT 651. SAMPLES 610

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	26	29	29	97	93	98	76	49	43	31	25	11	41
PCNT	4.26	4.75	4.75	16.07	15.25	16.07	12.79	8.03	7.05	5.08	4.10	1.80	6.30
ACUM	4.26	9.02	13.77	29.84	45.09	61.15	73.93	81.97	89.02	94.10	98.20	100.00	PRCNT OF REPORTS

1978 TOTALS DISTILLATN 10% RECOVERED, DEG F MEAN 201. SIGMA 10.9 REPORT 651. SAMPLES 645

		GTR 185. LEQ 185.	GTR 190. LEQ 190.	GTR 195. LEQ 195.	GTR 200. LEQ 200.	GTR 205. LEQ 205.	GTR 210. LEQ 210.	GTR 215. LEQ 215.	GTR 220. LEQ 220.	GTR 225. LEQ 225.	GTR 230. LEQ 230.	GTR 235.	MISSING VALUES
FREQ	111	75	50	64	68	83	46	53	24	24	10	26	6
PCNT	17.21	11.63	7.75	10.70	10.54	13.80	7.13	8.22	3.72	3.72	1.55	4.03	.92
ACUM	17.21	28.84	36.59	47.29	57.83	71.63	78.76	86.98	90.70	94.42	95.97	100.00	PRCNT OF REPORTS

1978 TOTALS DISTILLATN 20% RECOVERED, DEG F MEAN 228. SIGMA 20.9 REPORT 651. SAMPLES 638

		GTR 175. LEQ 175.	GTR 185. LEQ 185.	GTR 195. LEQ 195.	GTR 205. LEQ 205.	GTR 215. LEQ 215.	GTR 225. LEQ 225.	GTR 235. LEQ 235.	GTR 245. LEQ 245.	GTR 255. LEQ 255.	GTR 265. LEQ 265.	GTR 275.	MISSING VALUES
FREQ	0	1	31	51	98	123	130	86	51	27	25	15	13
PCNT	0.00	.16	4.86	7.99	15.36	19.28	20.38	13.48	7.99	4.23	3.92	2.35	2.00
ACUM	0.00	.16	5.02	13.01	28.37	47.65	68.03	81.50	89.50	93.73	97.65	100.00	PRCNT OF REPORTS

1978 TOTALS DISTILLATN 50% RECOVERED, DEG F MEAN 295. SIGMA 27.4 REPORT 651. SAMPLES 631

		GTR 220. LEQ 220.	GTR 235. LEQ 235.	GTR 250. LEQ 250.	GTR 265. LEQ 265.	GTR 280. LEQ 280.	GTR 295. LEQ 295.	GTR 310. LEQ 310.	GTR 325. LEQ 325.	GTR 340. LEQ 340.	GTR 355. LEQ 355.	GTR 370.	MISSING VALUES
FREQ	0	6	16	69	110	111	126	100	52	22	10	0	20
PCNT	0.00	.95	2.54	10.94	16.86	17.59	19.97	15.85	8.24	3.49	1.58	0.00	3.07
ACUM	0.00	.95	3.49	14.42	33.28	50.87	70.84	86.69	94.93	98.42	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS DISTILLATN 90% RECOVERED, DEG F MEAN 401. SIGMA 33.9 REPORT 651. SAMPLES 640

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.		
FREQ	11	17	44	36	52	66	91	143	136	41	3	0	11
PCNT	1.72	2.66	6.88	5.63	8.13	10.31	14.22	22.34	21.25	6.41	.47	0.00	1.69
ACUM	1.72	4.38	11.25	16.88	25.00	35.31	49.53	71.88	93.12	99.53	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS DISTILLATN END POINT, DEG F MEAN 459. SIGMA 31.9 REPORT 651. SAMPLES 647

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		380.	395.	410.	425.	440.	455.	470.	485.	500.	515.	530.	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	380.	395.	410.	425.	440.	455.	470.	485.	500.	515.	530.		
FREQ	11	17	41	39	37	82	140	141	112	27	0	0	4
PCNT	1.70	2.63	6.34	6.03	5.72	12.67	21.64	21.79	17.31	4.17	0.00	0.00	.61
ACUM	1.70	4.33	10.66	16.69	22.41	35.09	56.72	78.52	95.83	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS PERCENT RECOVERED AT 400 F MEAN 90.1 SIGMA 7.09 REPORT 651. SAMPLES 231

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		76.0	78.0	80.0	82.0	84.0	86.0	88.0	90.0	92.0	94.0	96.0	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	
	78.0	80.0	82.0	84.0	86.0	88.0	90.0	92.0	94.0	96.0	98.0		
FREQ	15	7	19	14	22	24	13	20	12	17	52	17	420
PCNT	6.49	3.03	7.79	6.06	9.52	10.39	5.63	8.66	5.19	7.36	22.51	7.36	64.52
ACUM	6.49	9.52	17.32	23.38	32.90	43.29	48.92	57.58	62.77	70.13	92.64	100.00	PRCNT OF REPORTS

1978 TOTALS GRAVITY, DEG API MEAN 53.9 SIGMA 1.86 REPORT 651. SAMPLES 628

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		47.0	48.0	49.0	50.0	51.0	52.0	53.0	54.0	55.0	56.0	57.0	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	47.0	48.0	49.0	50.0	51.0	52.0	53.0	54.0	55.0	56.0	57.0		
FREQ	2	4	5	6	22	50	102	126	110	123	78	0	23
PCNT	.32	.64	.80	.96	3.50	7.96	16.24	20.06	17.52	19.59	12.42	0.00	3.53
ACUM	.32	.96	1.75	2.71	6.21	14.17	30.41	50.48	67.99	87.58	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS EXISTENT GUM, MG/100ML MEAN .6 SIGMA .64 REPORT 651. SAMPLES 609

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	276	209	60	30	11	10	1	3	0	1	0	0	42
PCNT	45.32	34.32	9.85	6.24	1.81	1.64	.16	.49	0.00	.16	0.00	0.00	6.45
ACUM	45.32	79.64	89.49	95.73	97.54	99.18	99.34	99.84	99.84	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS TOTAL SULFUR, WEIGHT PERCENT MEAN .042 SIGMA .042 REPORT 651. SAMPLES 597

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	1	461	86	31	14	2	2	0	0	0	0	0	54
PCNT	.17	77.22	14.41	5.19	2.35	.34	.34	0.00	0.00	0.00	0.00	0.00	8.29
ACUM	.17	77.39	91.79	96.98	99.33	99.66	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0005 SIGMA .00029 REPORT 651. SAMPLES 287

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	50	46	46	31	31	23	12	13	8	33	0	364
PCNT	0.00	17.42	13.94	16.03	10.80	10.80	8.01	4.18	4.53	2.79	11.50	0.00	55.91
ACUM	0.00	17.42	31.36	47.39	58.19	68.99	77.00	81.18	85.71	88.50	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 651. SAMPLES 629

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	4	23	39	44	72	66	107	108	74	65	27	0	22
PCNT	.64	3.66	6.20	7.00	11.45	10.49	17.01	17.17	11.76	10.33	4.29	0.00	3.38
ACUM	.64	4.29	10.49	17.49	28.93	39.43	56.44	73.61	85.37	95.71	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.5 SIGMA .1 REPORT 651. SAMPLES 597

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	6	28	64	116	194	156	31	2	0	54
PCNT	0.00	0.00	0.00	1.01	4.69	10.72	19.43	32.50	26.13	5.19	.34	0.00	8.29
ACUM	0.00	0.00	0.00	1.01	5.70	16.42	35.85	68.34	94.47	99.66	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS AROMATIC CONTENT, VOLUME PERCENT MEAN 11.4 SIGMA 3.25 REPORT 651. SAMPLES 614

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0		
FREQ	0	0	5	44	189	173	117	64	13	9	0	0	37
PCNT	0.00	0.00	.81	7.17	30.78	28.18	19.06	10.42	2.12	1.47	0.00	0.00	5.68
ACUM	0.00	0.00	.81	7.98	38.76	66.94	85.99	96.42	98.53	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS OLEFIN CONTENT, VOLUME PERCENT MEAN .8 SIGMA .42 REPORT 651. SAMPLES 604

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		0.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	0.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0		
FREQ	6	171	328	67	22	6	2	2	0	0	0	0	47
PCNT	.99	28.31	54.30	11.09	3.64	.99	.33	.33	0.00	0.00	0.00	0.00	7.22
ACUM	.99	29.30	83.61	94.70	98.34	99.34	99.67	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS PERCNT HYDROGEN (CALCD) MEAN 14.36 SIGMA .22 REPORT 651. SAMPLES 572

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		13.60	13.75	13.90	14.05	14.20	14.35	14.50	14.65	14.80	14.95	15.10	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	13.60	13.75	13.90	14.05	14.20	14.35	14.50	14.65	14.80	14.95	15.10		
FREQ	0	3	21	37	69	113	146	139	44	0	0	0	79
PCNT	0.00	.52	3.67	6.47	12.06	19.76	25.52	24.30	7.69	0.00	0.00	0.00	12.14
ACUM	0.00	.52	4.20	10.66	22.73	42.48	68.01	92.31	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS SMOKE POINT MEAN 27.6 SIGMA 3.30 REPORT 651. SAMPLES 569

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	2	24	75	124	124	96	93	19	14	0		82
PCNT	0.00	.35	4.22	13.18	21.79	21.79	15.82	16.34	3.34	2.46	0.00	0.00	12.60
ACUM	0.00	.35	4.57	17.75	39.54	61.34	77.15	93.50	96.84	99.30	100.00	100.00	PCNT OF REPORTS

1978 TOTALS WATER SEPARATION INDEX MODIFIED MEAN 90. SIGMA 7.2 REPORT 651. SAMPLES 642

		GTR 70.	GTR 73.	GTR 76.	GTR 79.	GTR 82.	GTR 85.	GTR 88.	GTR 91.	GTR 94.	GTR 97.	GTR 100.	MISSING VALUES
	LEQ 70.	LEQ 73.	LEQ 76.	LEQ 79.	LEQ 82.	LEQ 85.	LEQ 88.	LEQ 91.	LEQ 94.	LEQ 97.	LEQ 100.		
FREQ	0	9	27	38	54	46	80	90	113	107	88	0	9
PCNT	0.00	1.40	4.21	5.92	8.41	7.17	12.46	12.46	17.60	16.67	13.71	0.00	1.38
ACUM	0.00	1.40	5.61	11.53	19.94	27.10	39.56	52.02	69.63	86.29	100.00	100.00	PCNT OF REPORTS

1978 TOTALS PARTICULATE CONTAMINATE, MG/LITER MEAN .37 SIGMA .24 REPORT 651. SAMPLES 625

		GTR 0.00	GTR .10	GTR .20	GTR .30	GTR .40	GTR .50	GTR .60	GTR .70	GTR .80	GTR .90	GTR 1.00	MISSING VALUES
	LEQ 0.00	LEQ .10	LEQ .20	LEQ .30	LEQ .40	LEQ .50	LEQ .60	LEQ .70	LEQ .80	LEQ .90	LEQ 1.00		
FREQ	10	109	121	93	95	50	49	29	37	24	9	0	26
PCNT	1.60	17.44	19.20	14.88	15.20	8.00	7.84	4.64	5.92	3.84	1.44	0.00	3.99
ACUM	1.60	19.04	38.24	53.12	68.32	76.32	84.16	88.80	94.72	98.56	100.00	100.00	PCNT OF REPORTS

1978 TOTALS ACID NUMBER, MG KOH/GRAM MEAN .006 SIGMA .0028 REPORT 651. SAMPLES 599

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	2	95	121	117	115	66	18	9	2	0	0	0	52
PCNT	.33	15.86	20.03	28.37	19.20	11.35	3.01	1.50	.33	0.00	0.00	0.00	7.99
ACUM	.33	16.19	36.23	64.61	83.81	95.16	98.16	99.67	100.00	100.00	100.00	100.00	PCNT OF REPORTS

1978 TOTALS FILTRATION TIME, 1 GALLON, MIN MEAN 5.1 SIGMA 2.1 REPORT 651. SAMPLES 627

		GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	GTR 11.0	GTR 12.0	MISSING VALUES
	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0	LEQ 11.0	LEQ 12.0		
FREQ	4	88	173	180	72	48	24	5	7	6	7	11	24
PCNT	.64	14.04	27.59	28.71	11.48	7.66	3.83	.80	1.12	1.28	1.12	1.75	3.69
ACUM	.64	14.67	42.26	70.97	82.46	90.11	93.94	94.74	95.85	97.13	98.25	100.00	PCNT OF REPORTS

1978 TOTALS DELTA P IN MM OF HG MEAN 1.1 SIGMA 1.5 REPORT 651. SAMPLES 115

		GTR 0.0	GTR 1.0	GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	MISSING VALUES
	LEQ 0.0	LEQ 1.0	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0		
FREQ	0	85	21	2	3	2	0	0	1	0	1	0	536
PCNT	0.00	73.91	18.26	1.74	2.61	1.74	0.00	0.00	.87	0.00	.87	0.00	82.33
ACUM	0.00	73.91	92.17	93.91	96.52	98.26	98.26	98.26	99.13	99.13	100.00	100.00	PCNT OF REPORTS

1978 TOTALS VISUAL RATING MEAN 1.0 SIGMA .3 REPORT 651. SAMPLES 394

		GTR 0.0	GTR .5	GTR 1.0	GTR 1.5	GTR 2.0	GTR 2.5	GTR 3.0	GTR 3.5	GTR 4.0	GTR 4.5	GTR 5.0	MISSING VALUES
	LEQ 0.0	LEQ .5	LEQ 1.0	LEQ 1.5	LEQ 2.0	LEQ 2.5	LEQ 3.0	LEQ 3.5	LEQ 4.0	LEQ 4.5	LEQ 5.0		
FREQ	0	14	348	10	20	1	1	0	0	0	0	0	257
PCNT	0.00	3.55	88.32	2.54	5.08	.25	.25	0.00	0.00	0.00	0.00	0.00	39.48
ACUM	0.00	3.55	91.88	94.42	99.49	99.75	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

NOTE: Of the missing values reported here in Fuel Thermal Stability, (i.e., Delta P and Visual Rating), 116 of those are really missing values. The balance was actually reported as 0.0

APPENDIX B - Histograms for 1978 Data

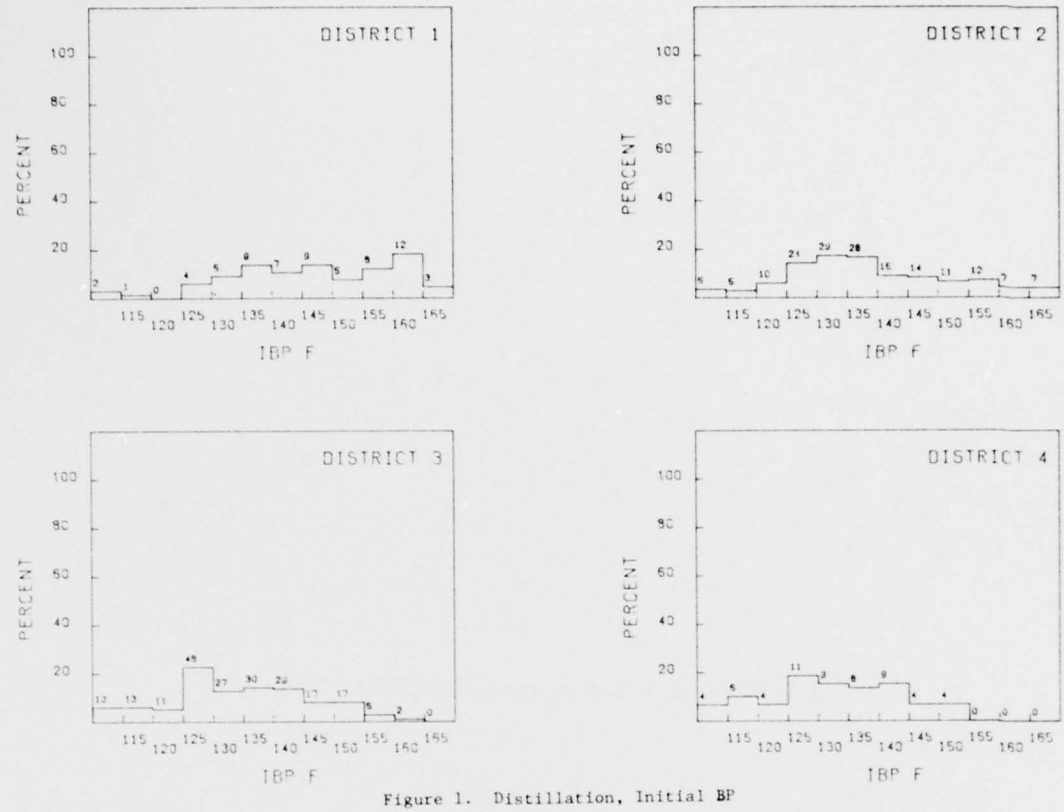
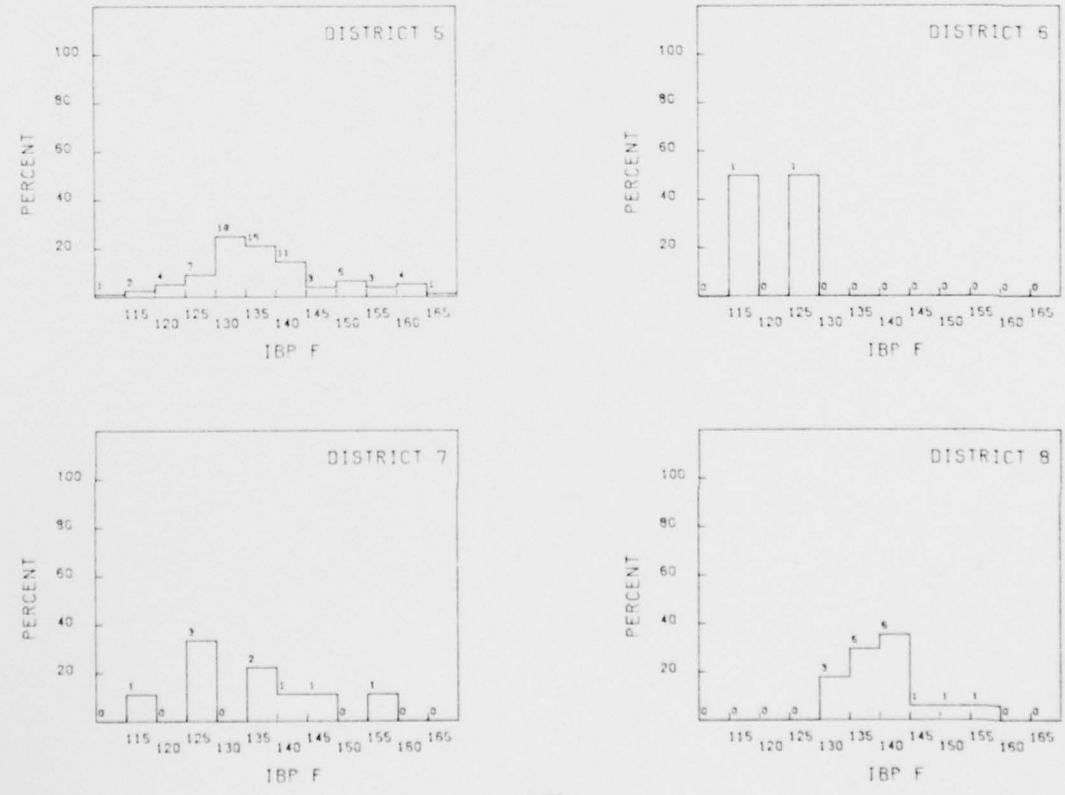


Figure 1. Distillation, Initial BP



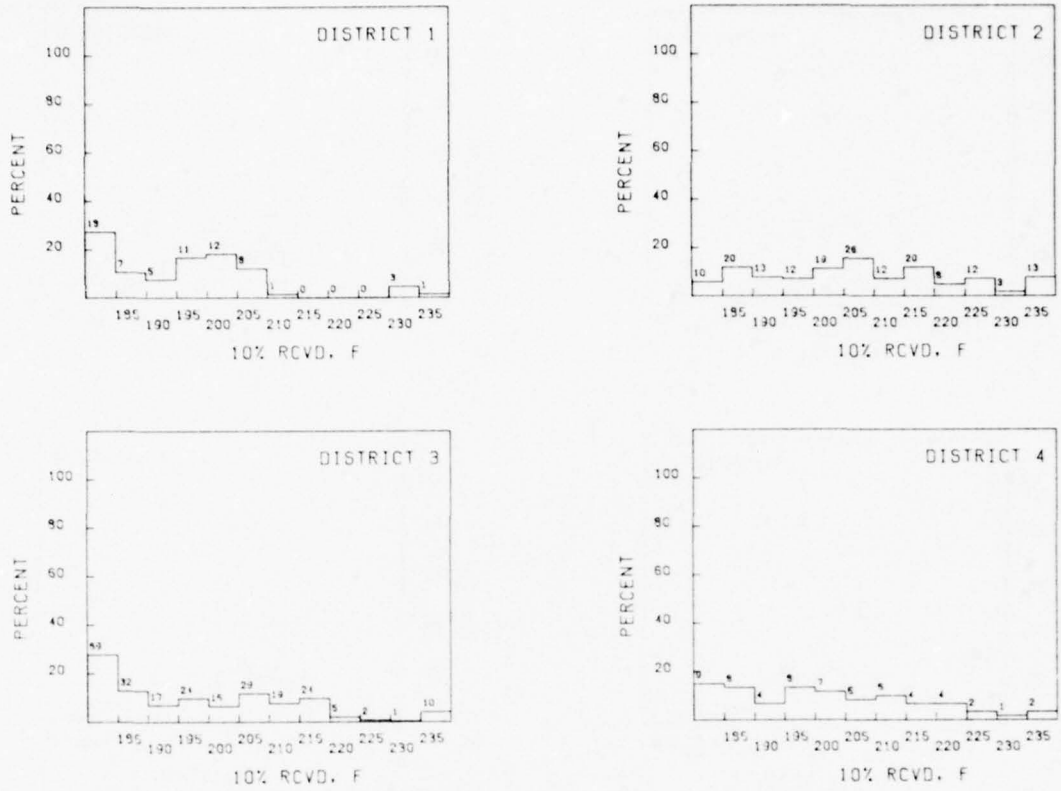
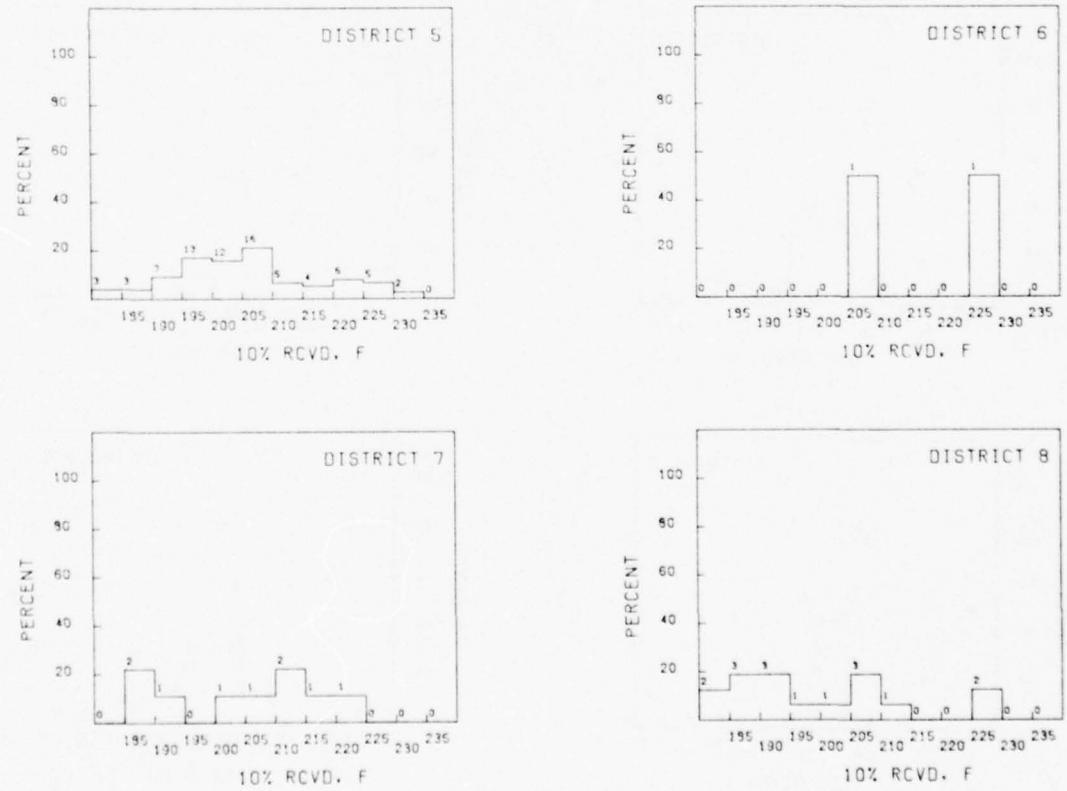


Figure 2. Distillation, 10% Recovered



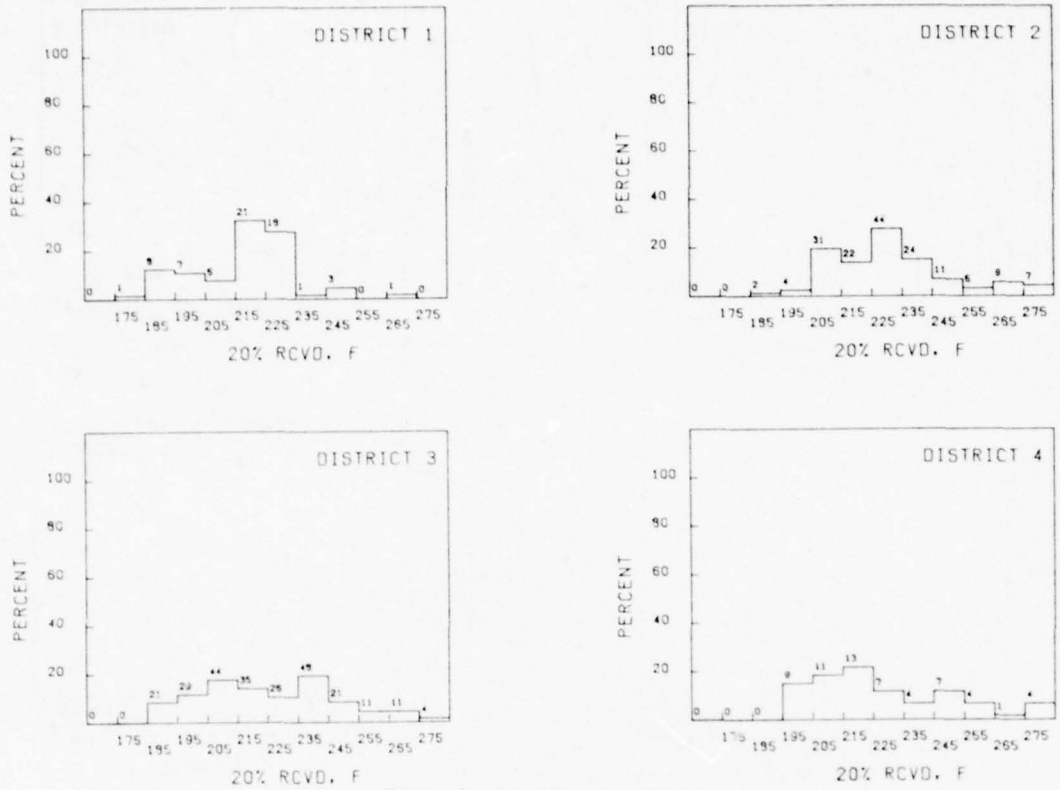
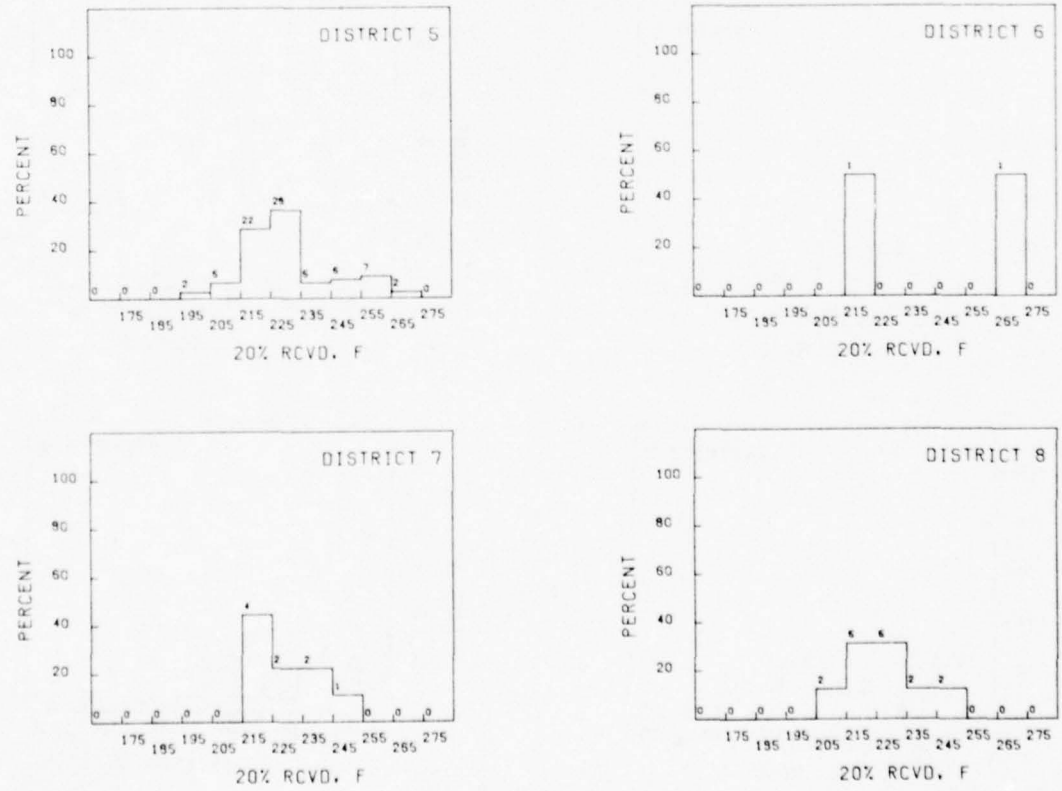


Figure 3. Distillation, 20% Recovered



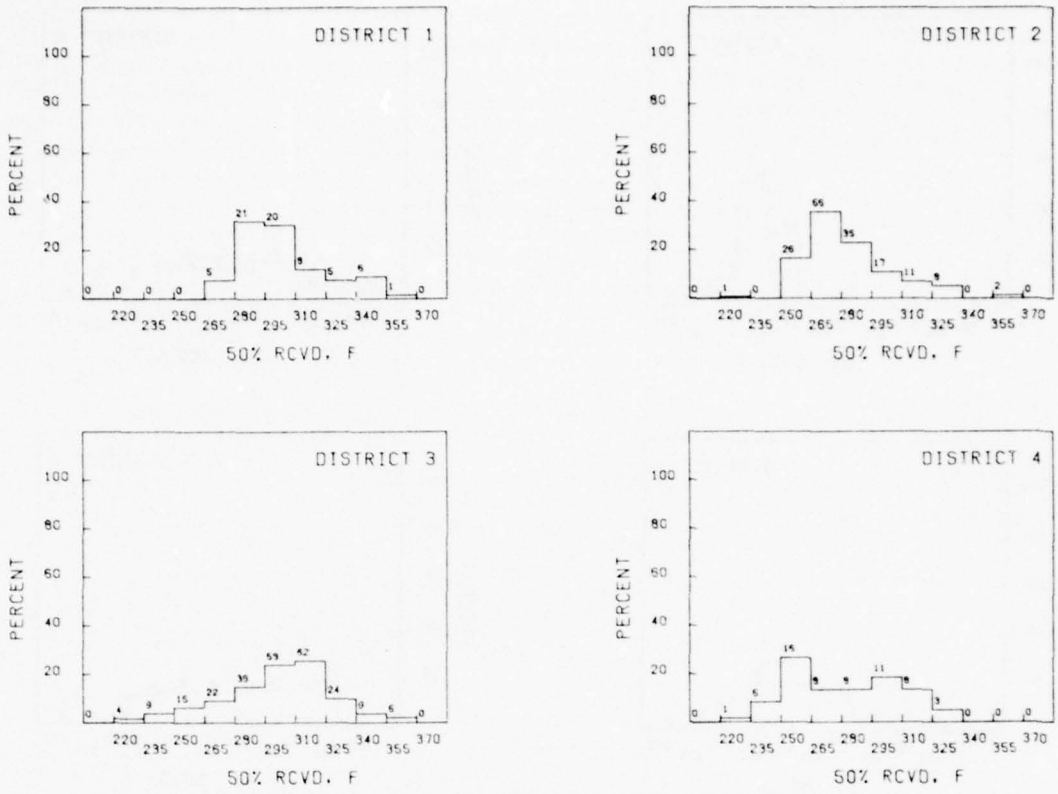
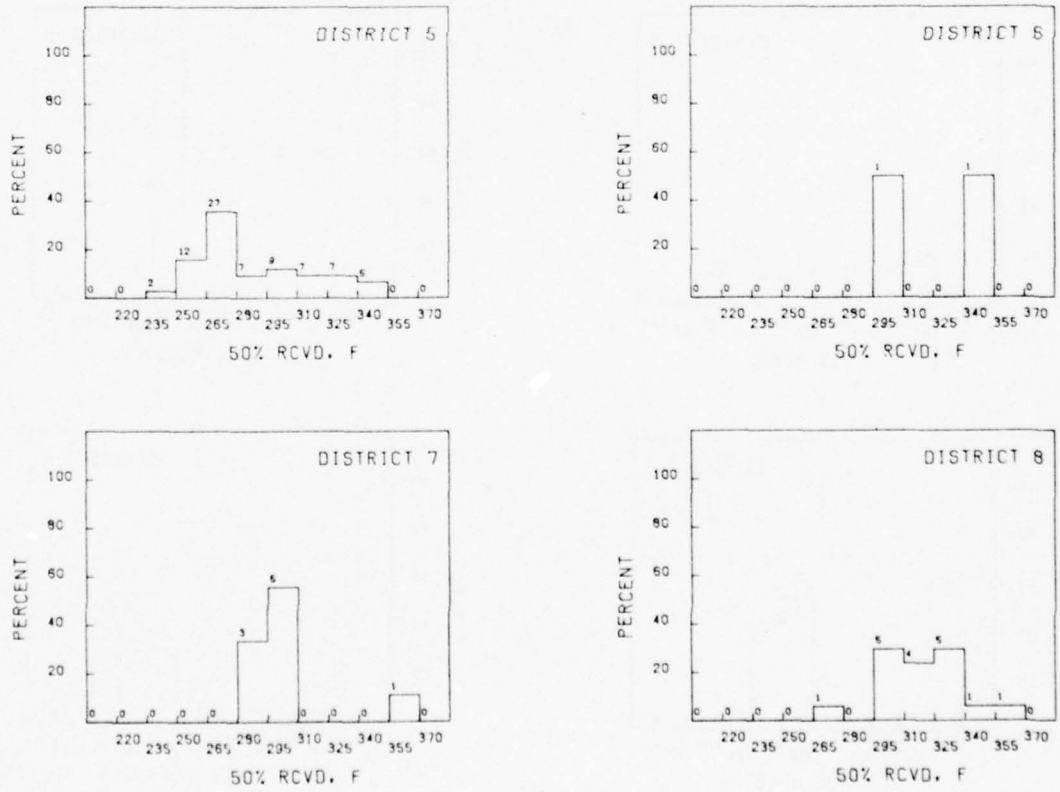


Figure 4. Distillation, 50% Recovered



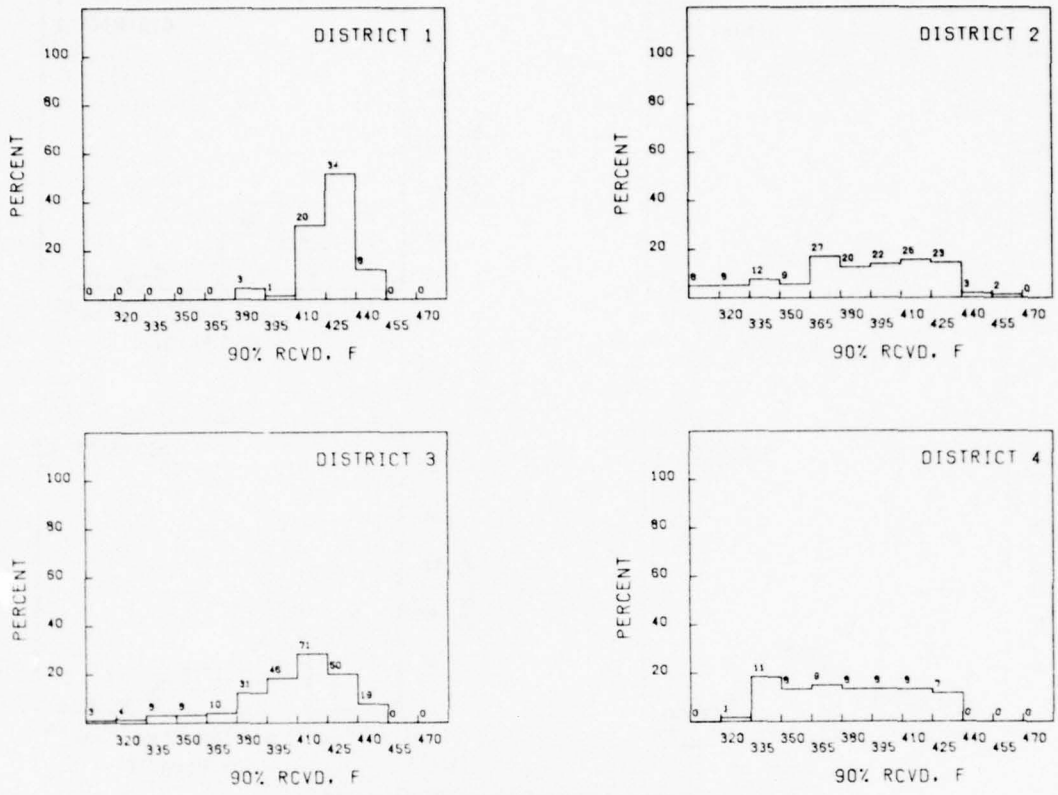
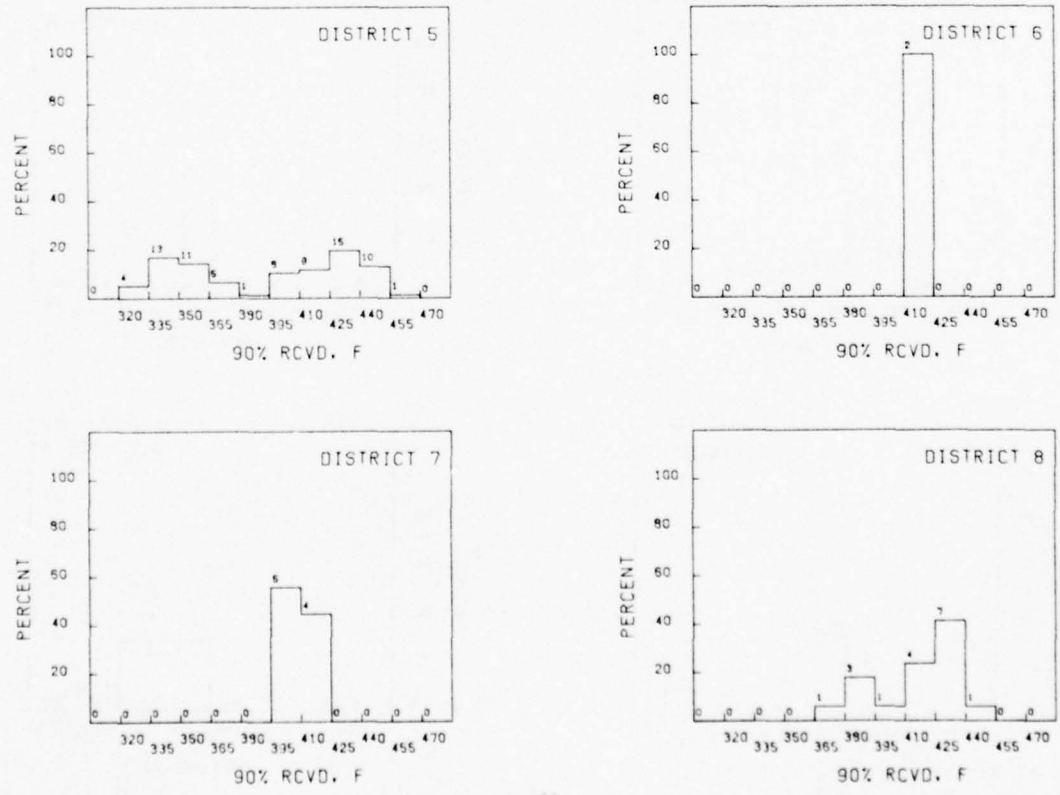


Figure 5. Distillation, 90% Recovered



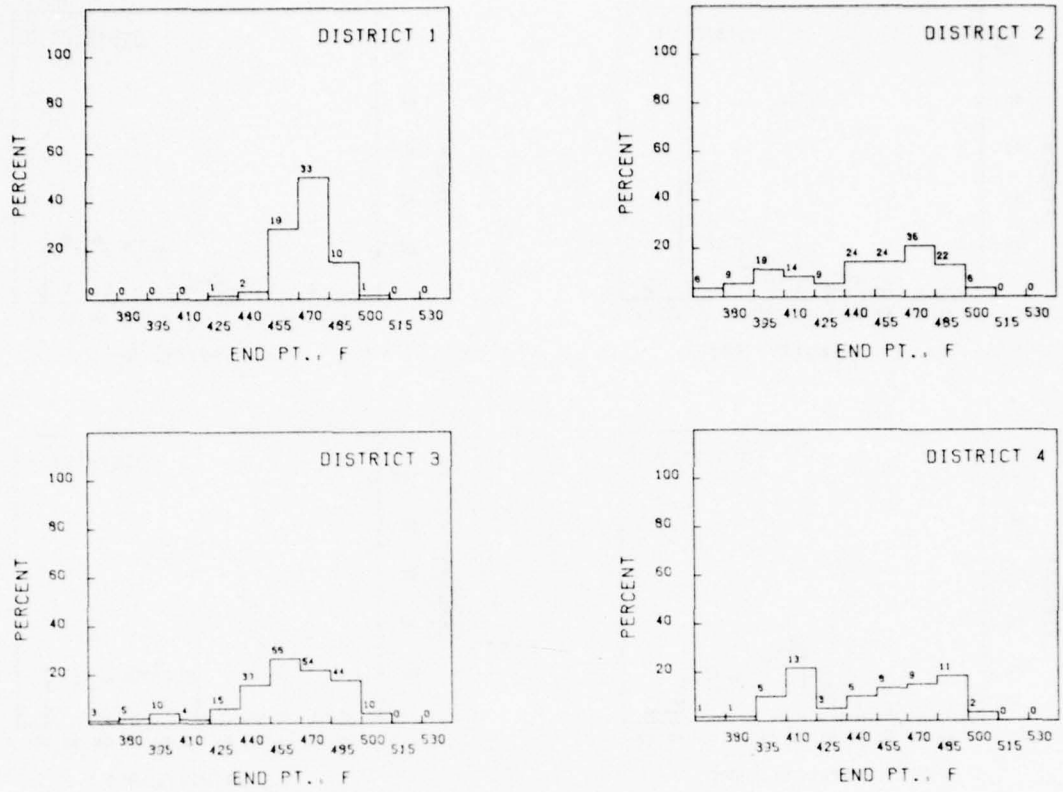
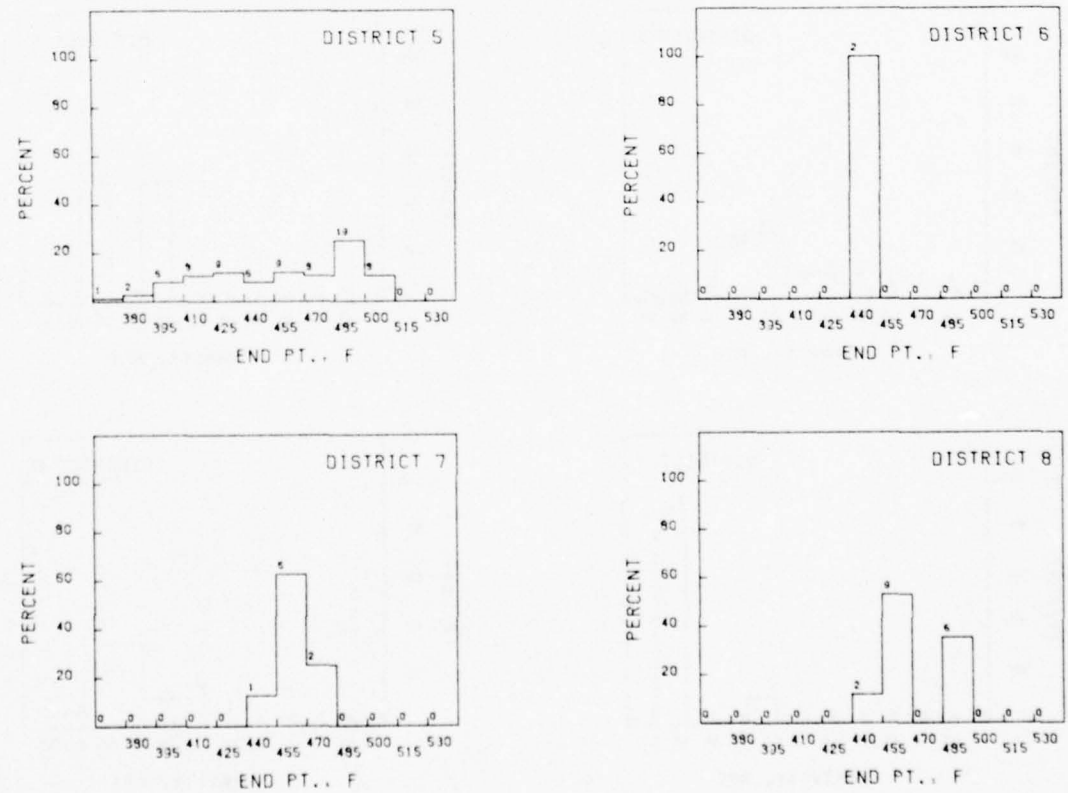


Figure 6. Distillation, End Point



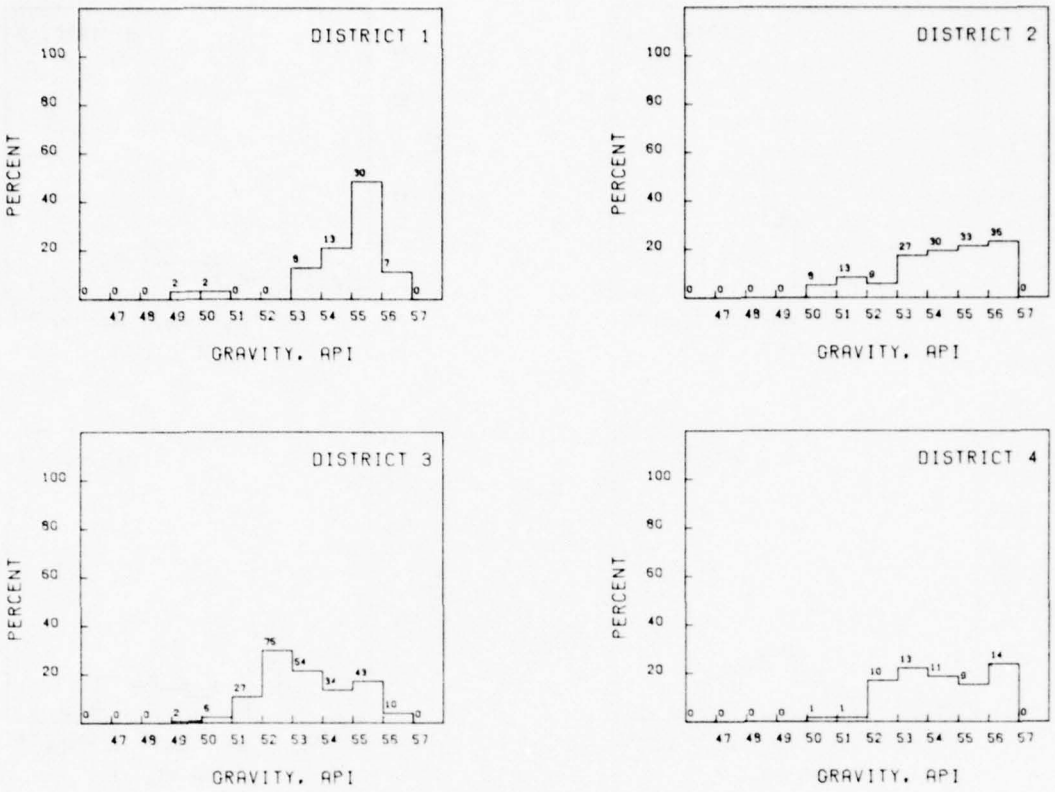
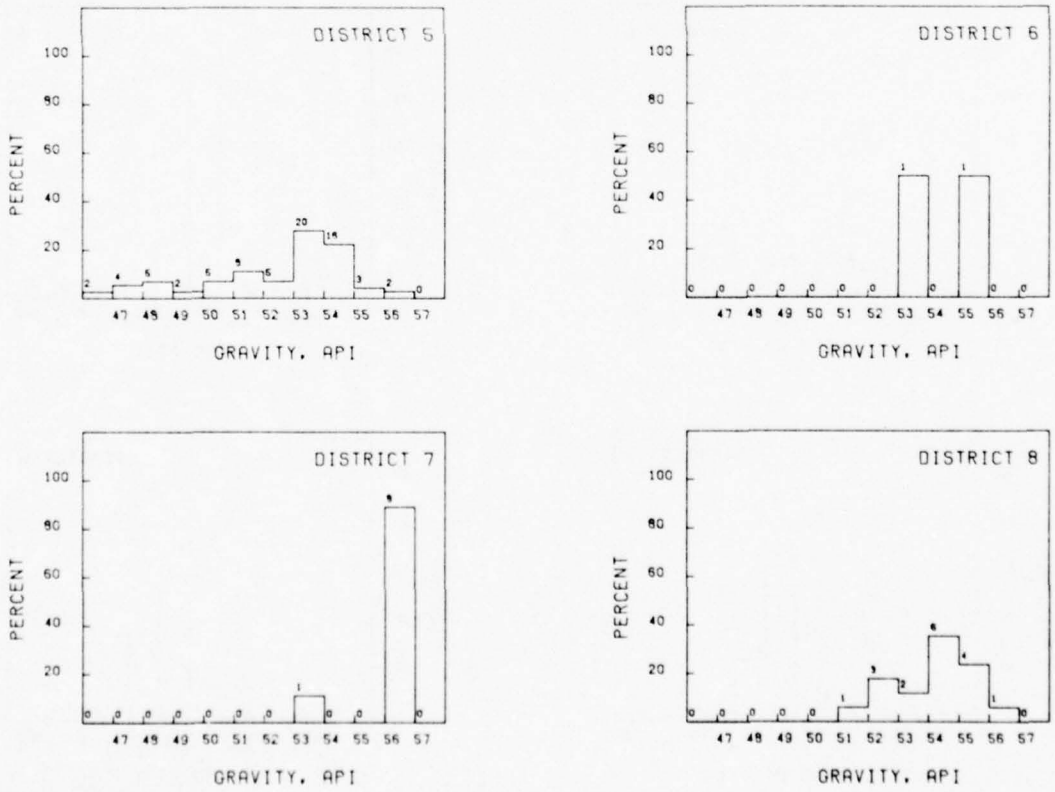
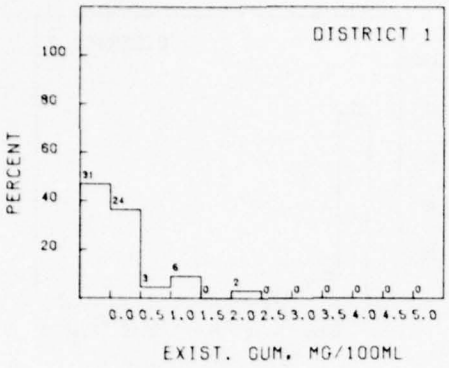
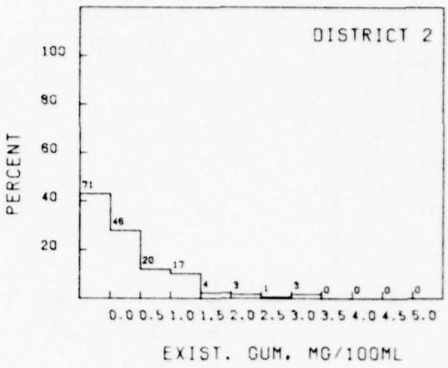
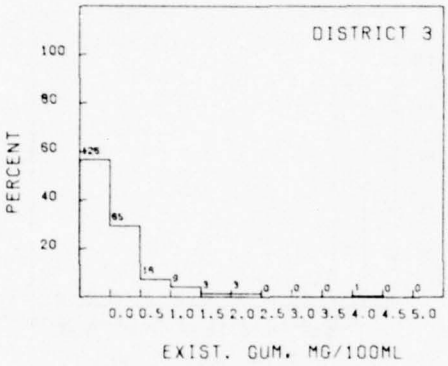


Figure 7. Gravity, DEG API









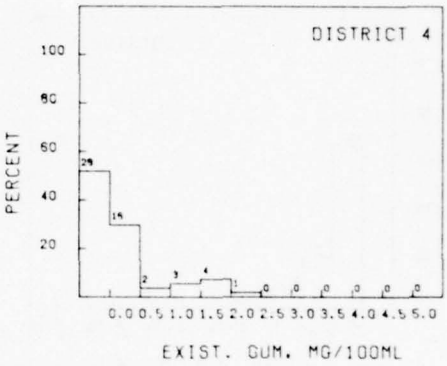
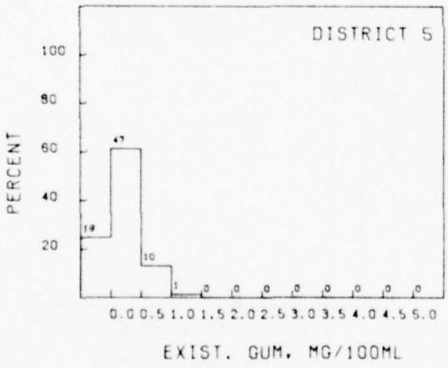
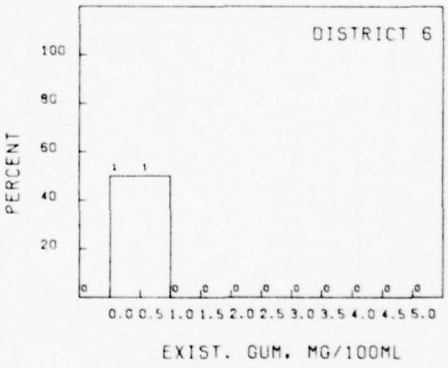
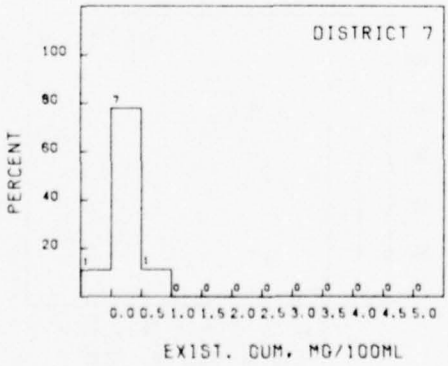
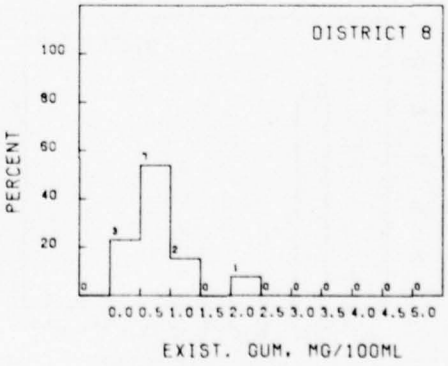


Figure 8. Existent Gum









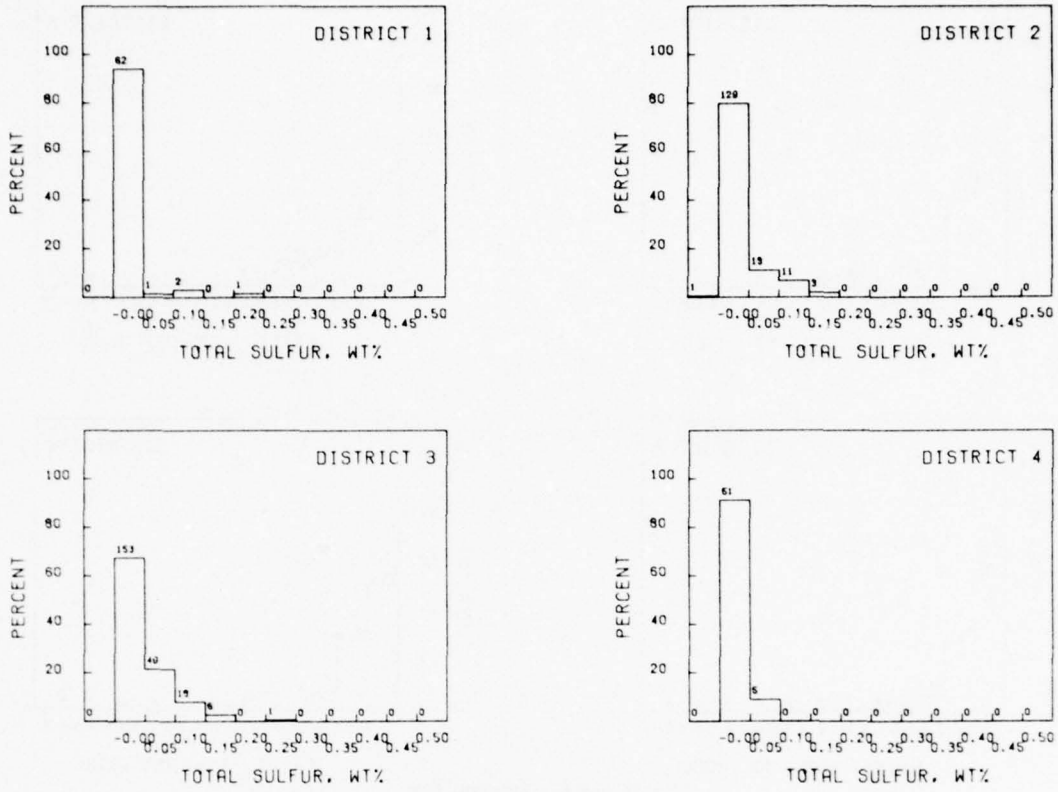
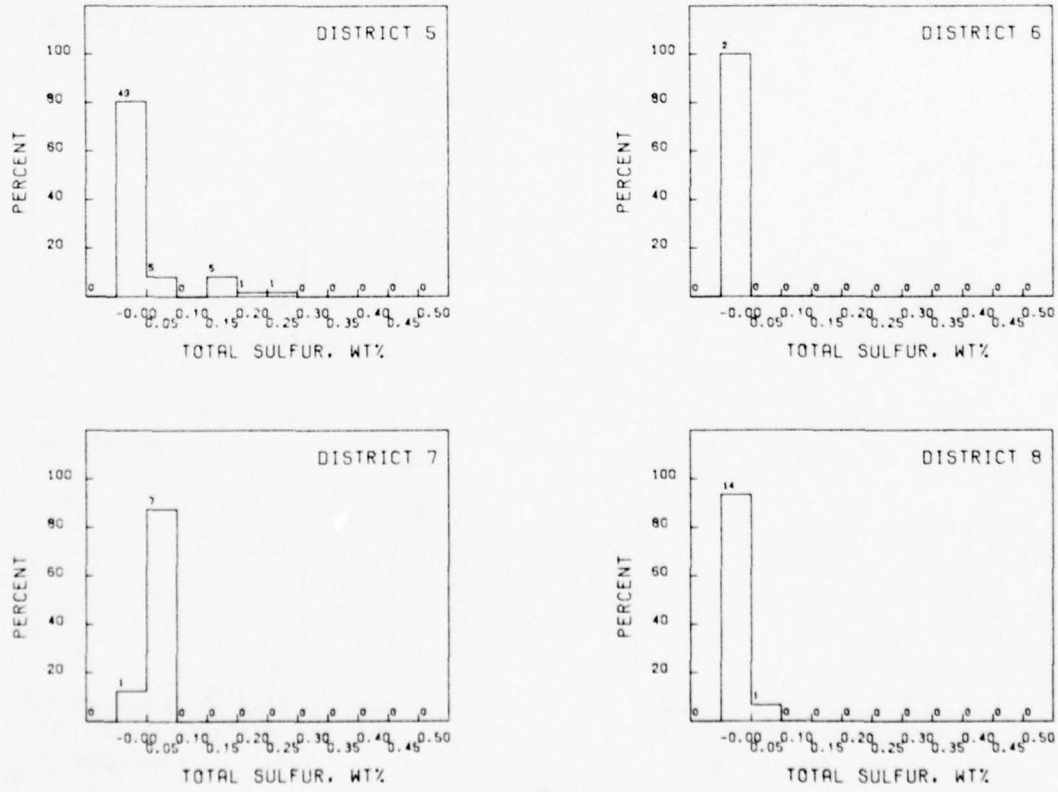


Figure 9. Total Sulfur



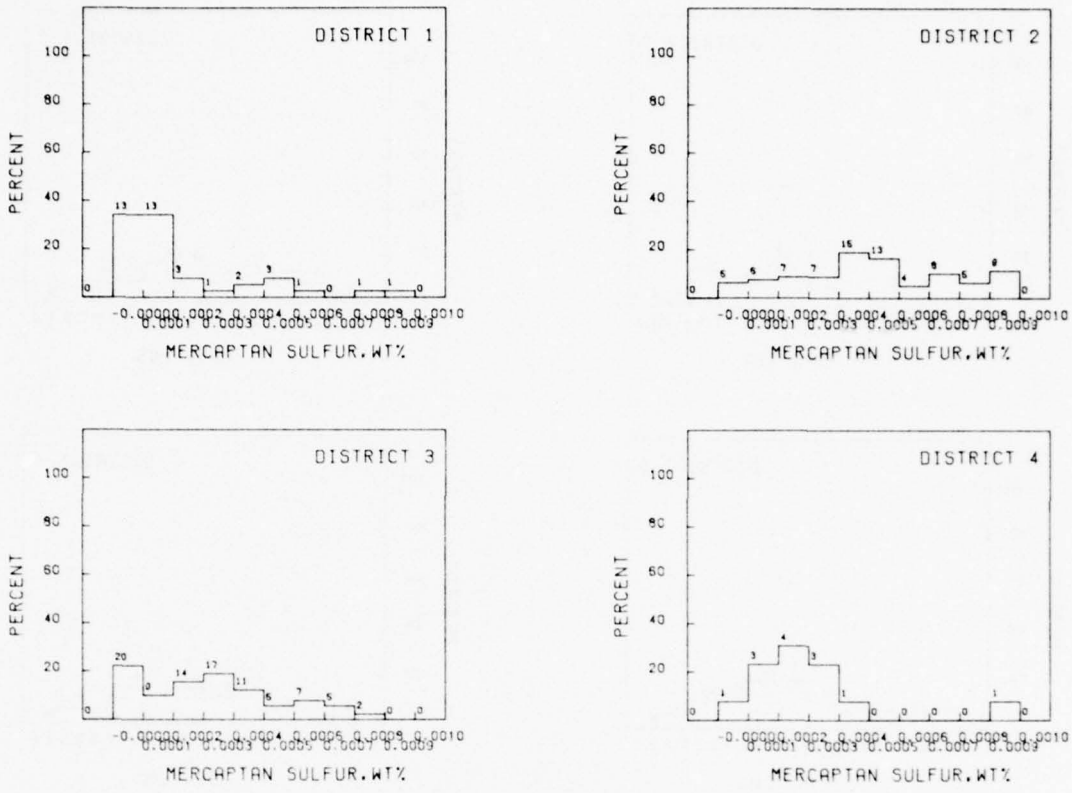
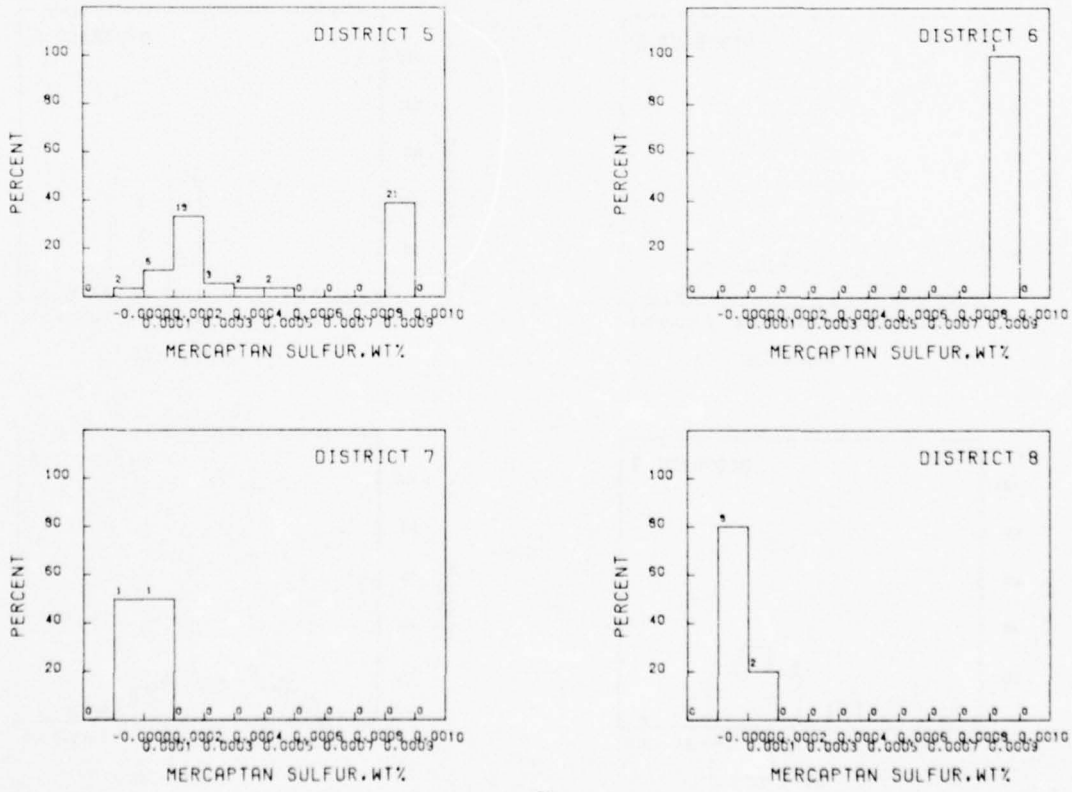


Figure 10. Mercaptan Sulfur



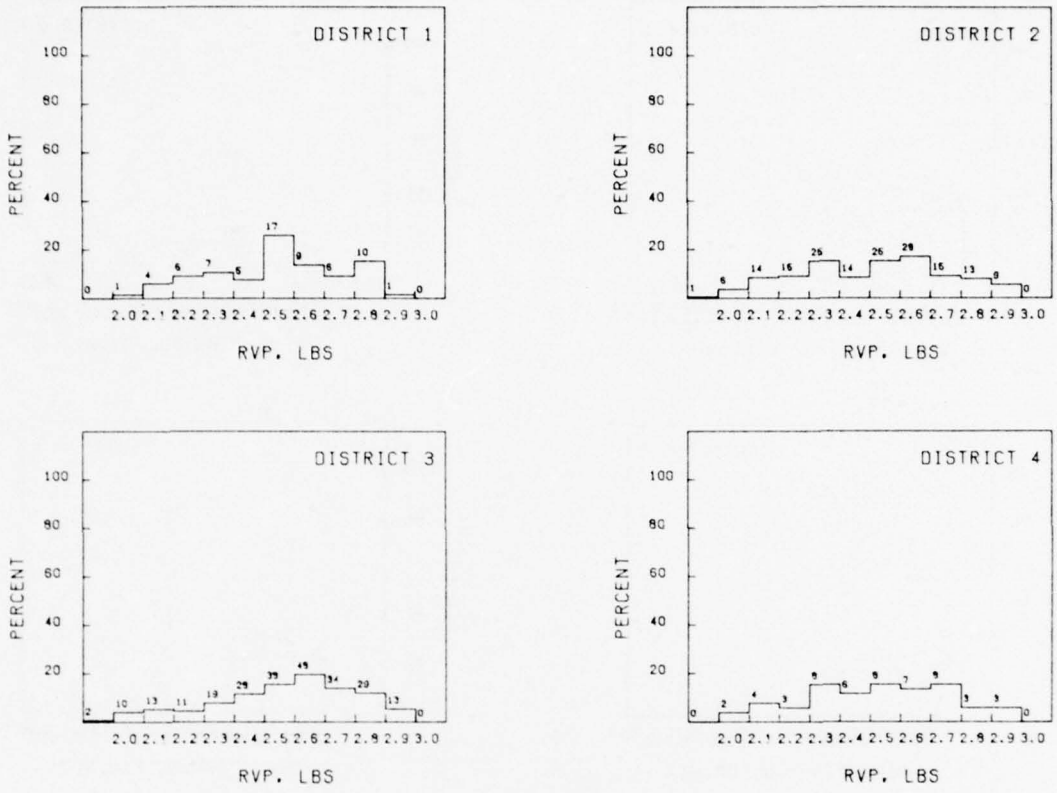
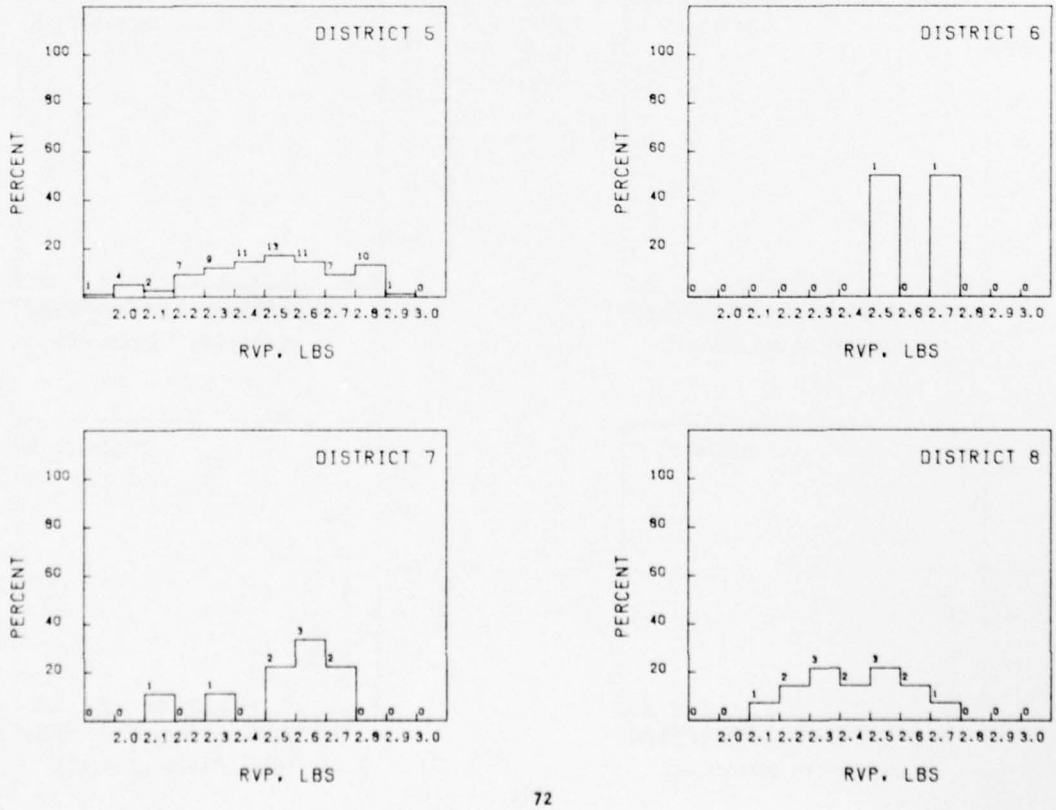


Figure 11. Reid Vapor Pressure



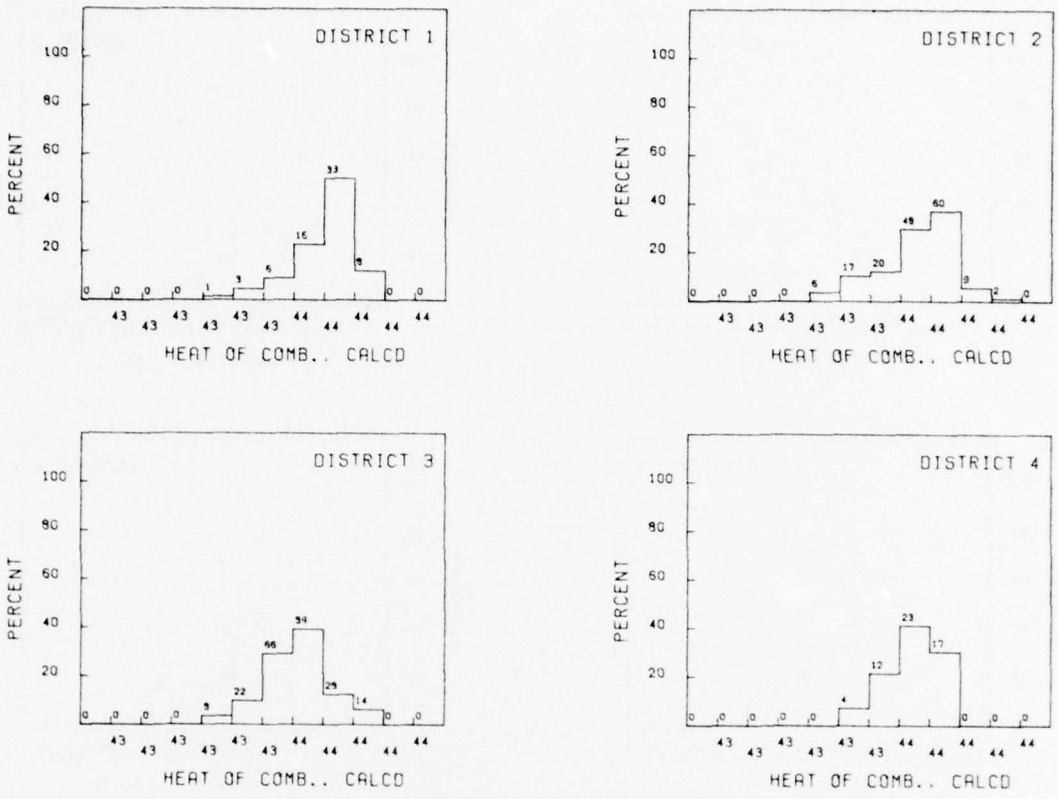
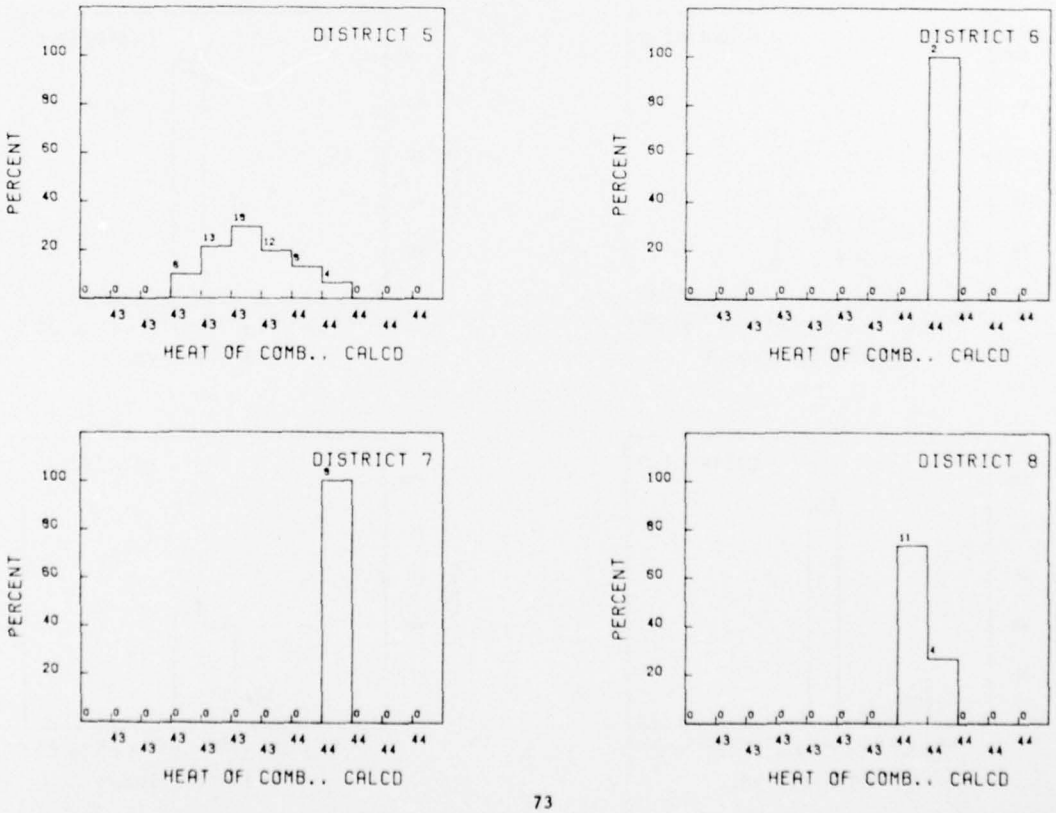


Figure 12. Heat of Combustion



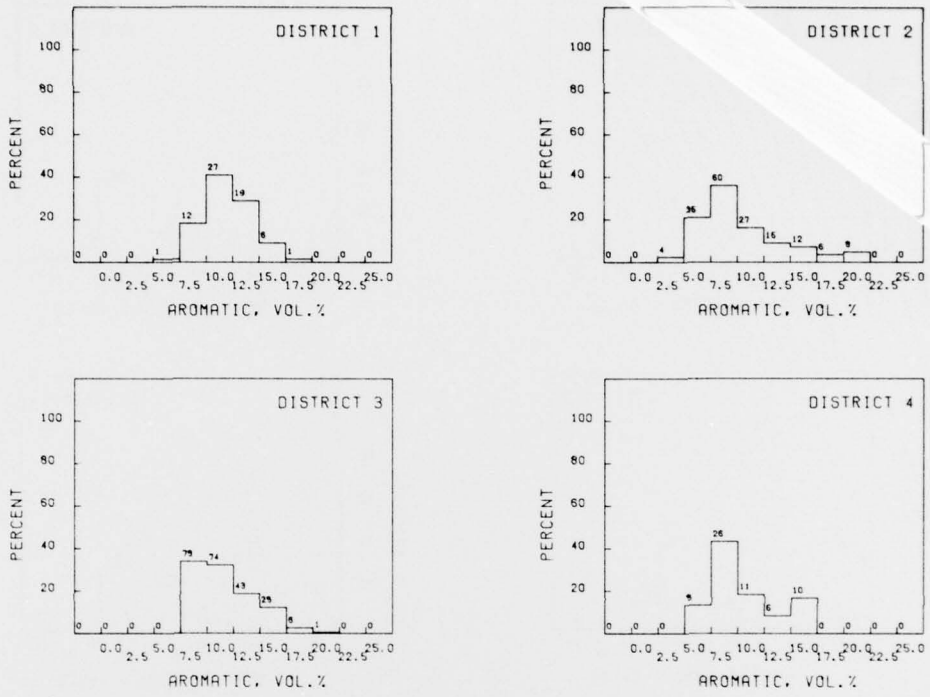
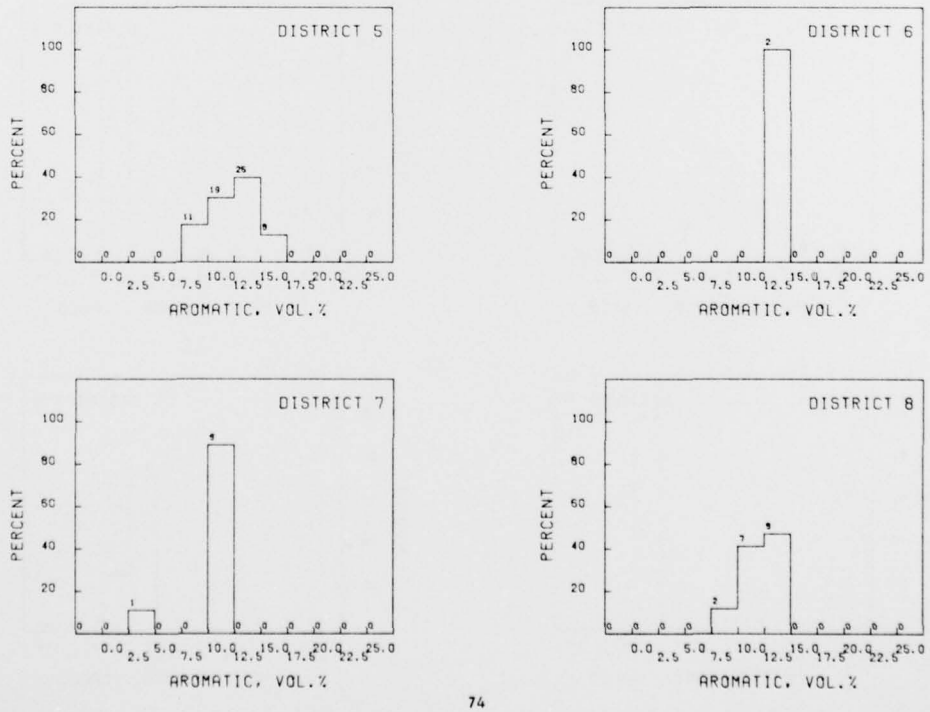


Figure 13. Aromatic Content



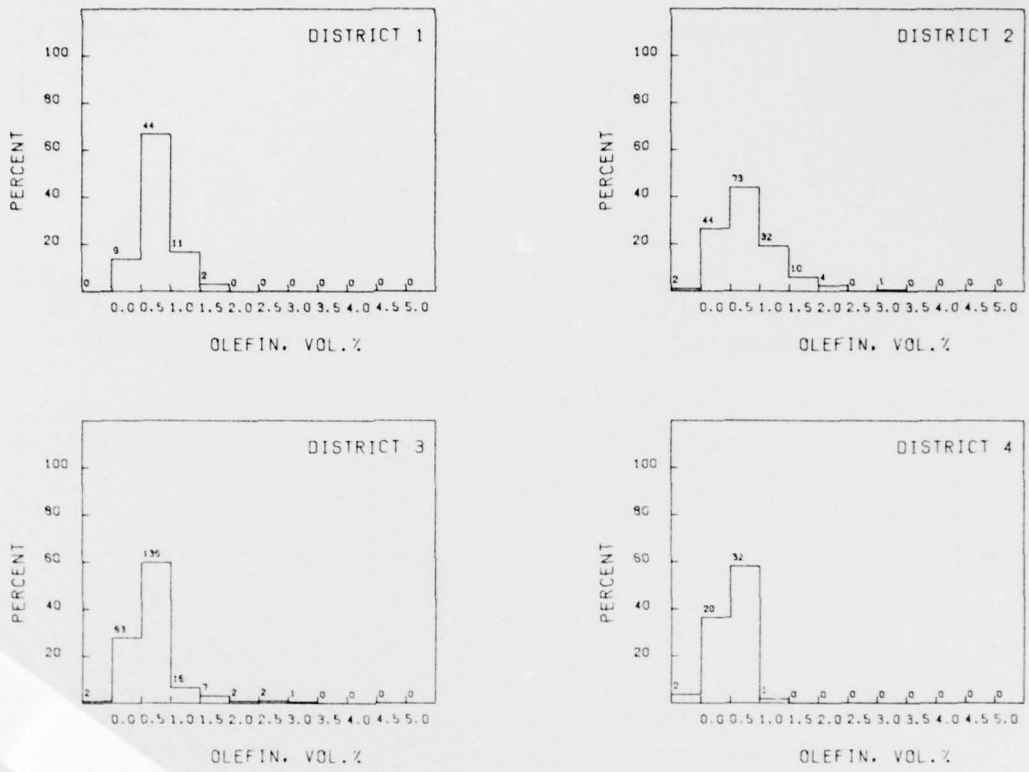
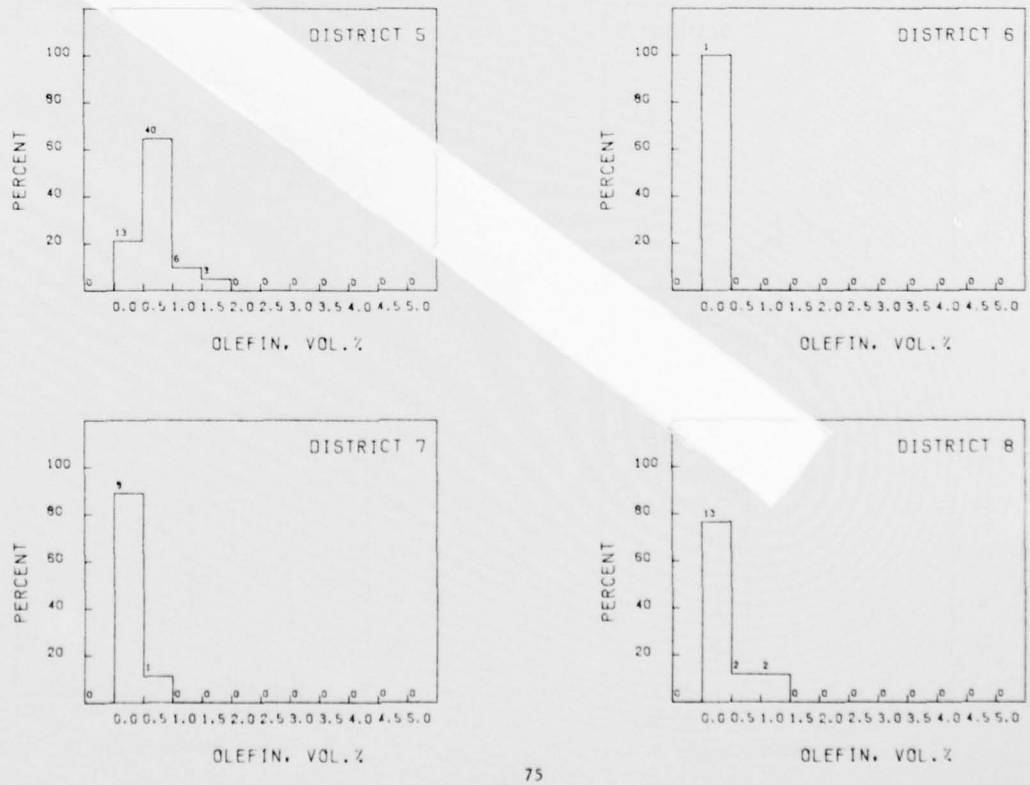


Figure 14. Olefin Content



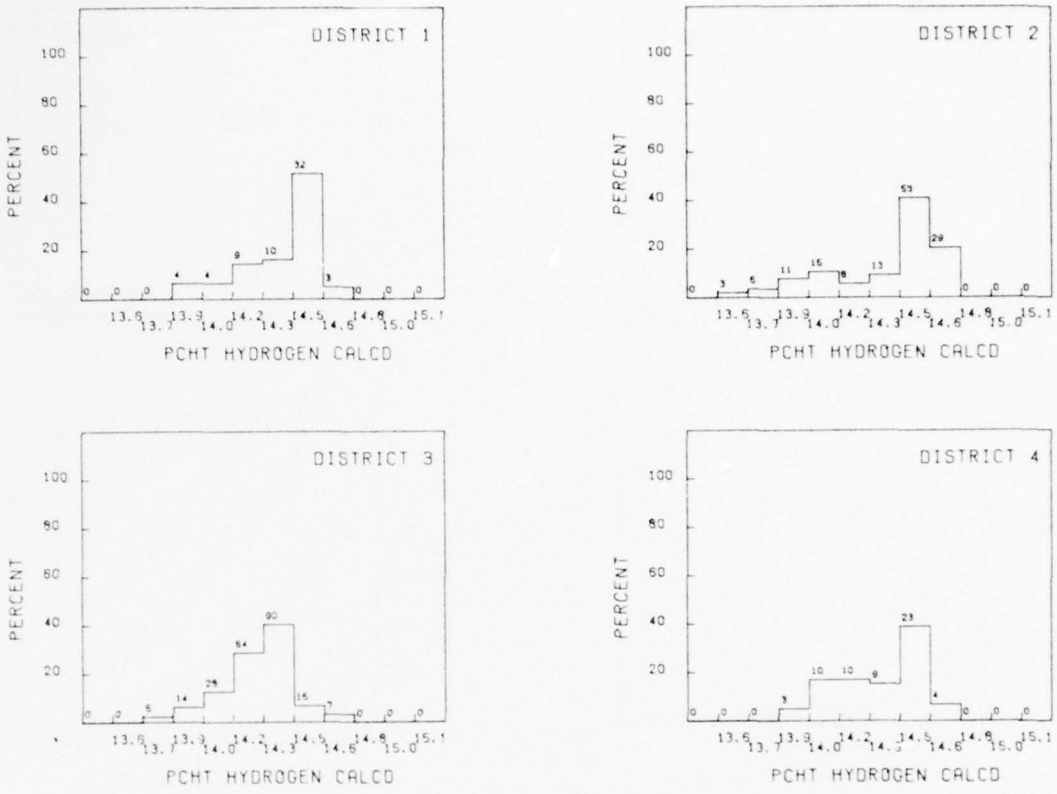
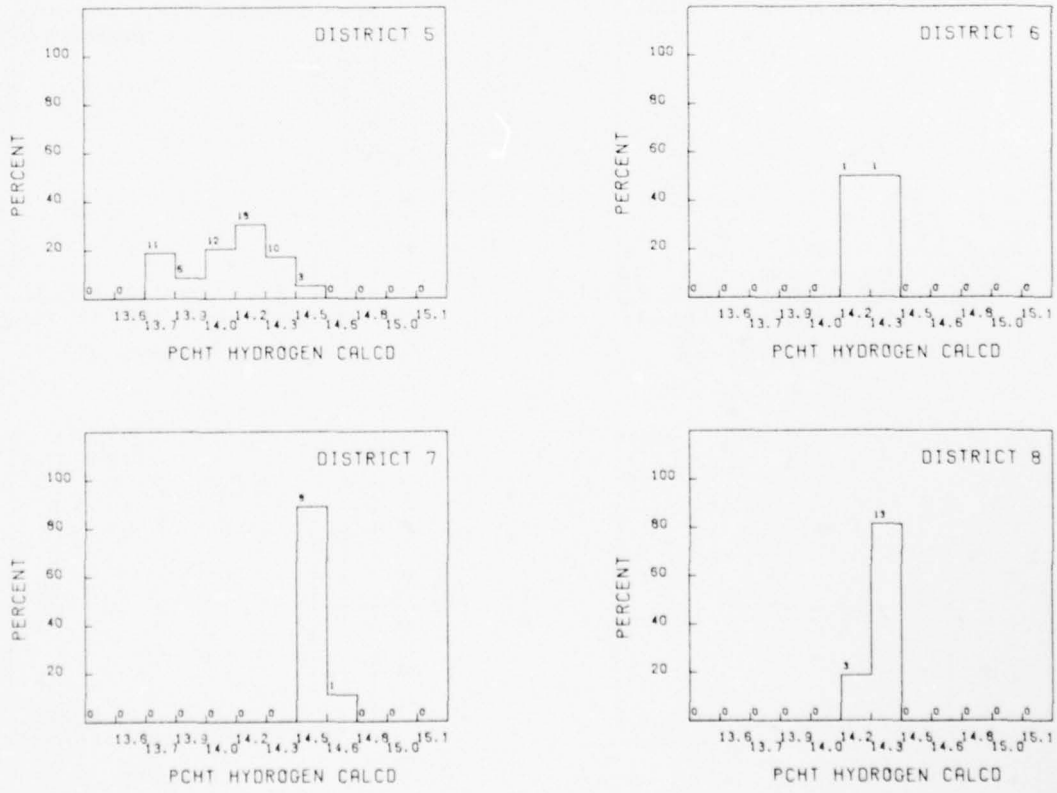


Figure 15. Percent Hydrogen



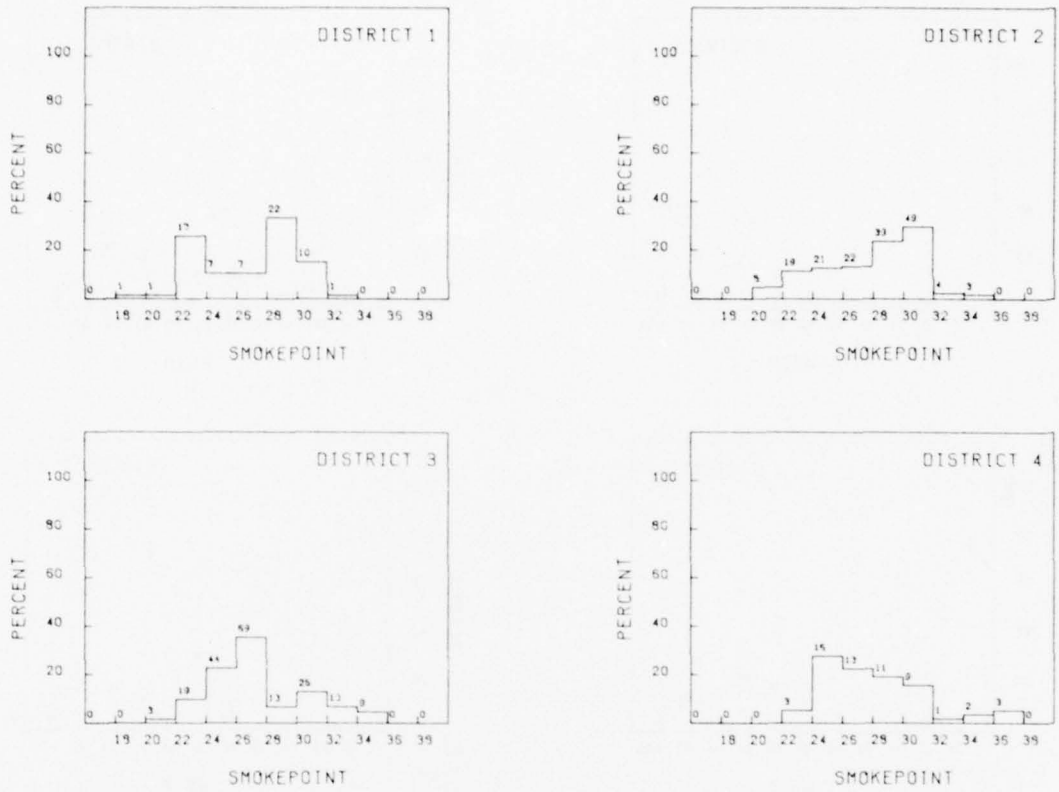
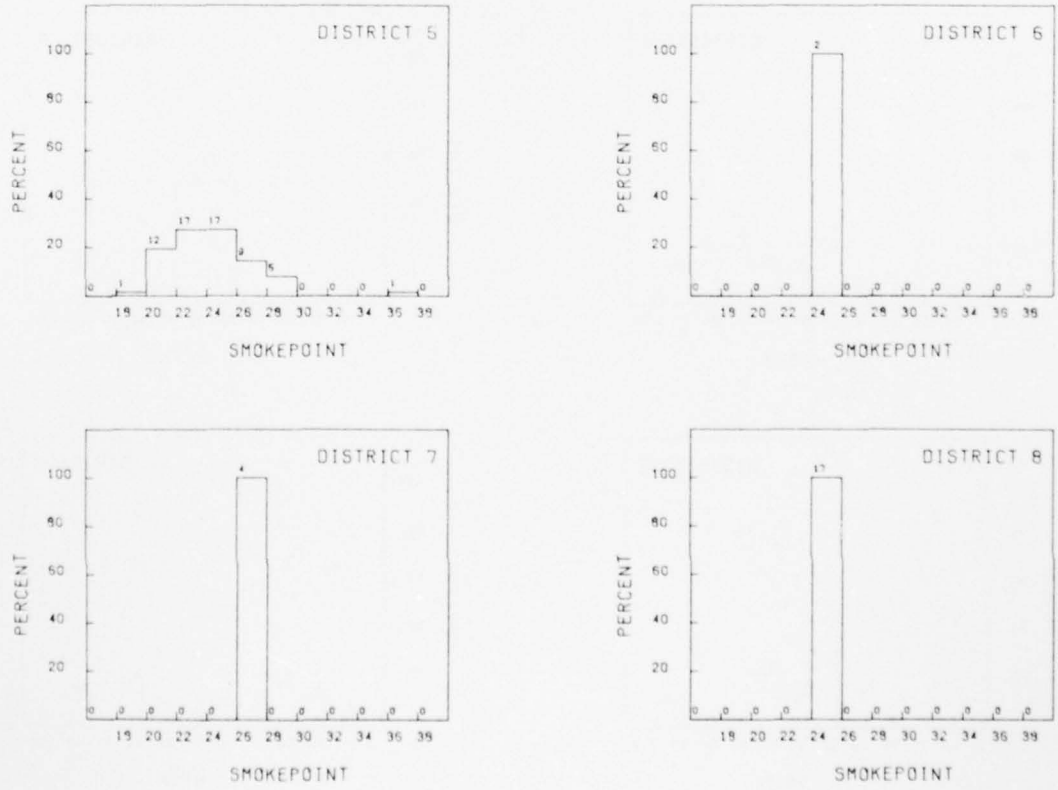


Figure 16. Smoke Point



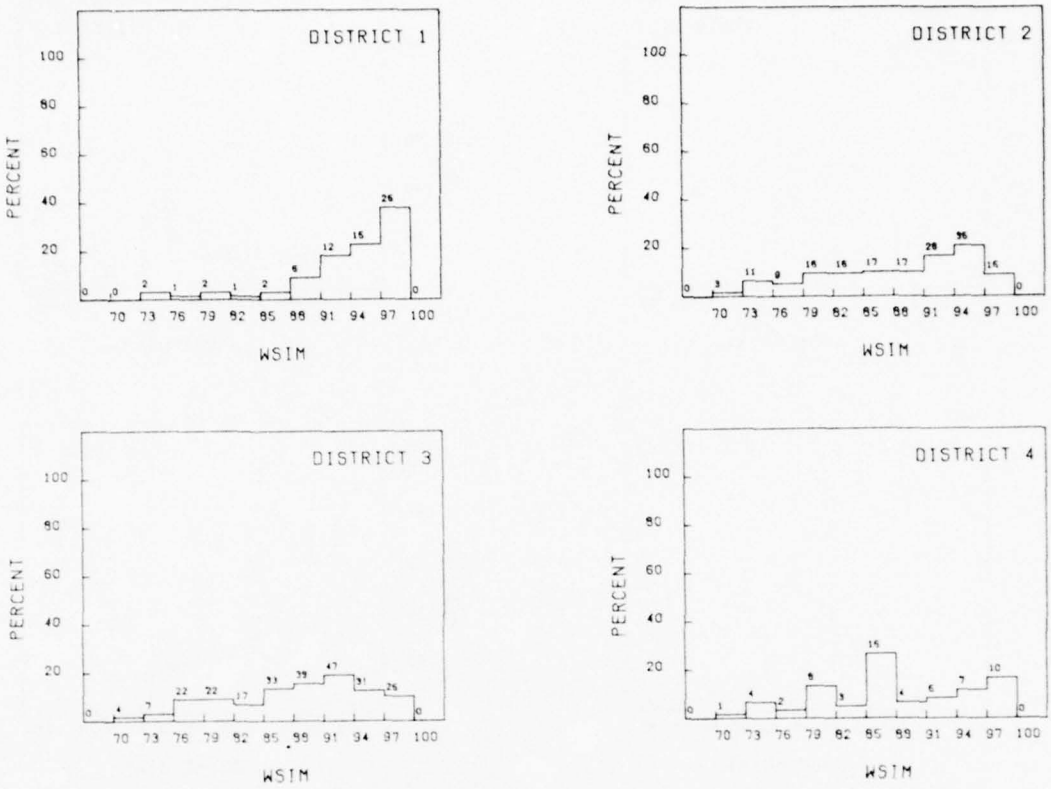
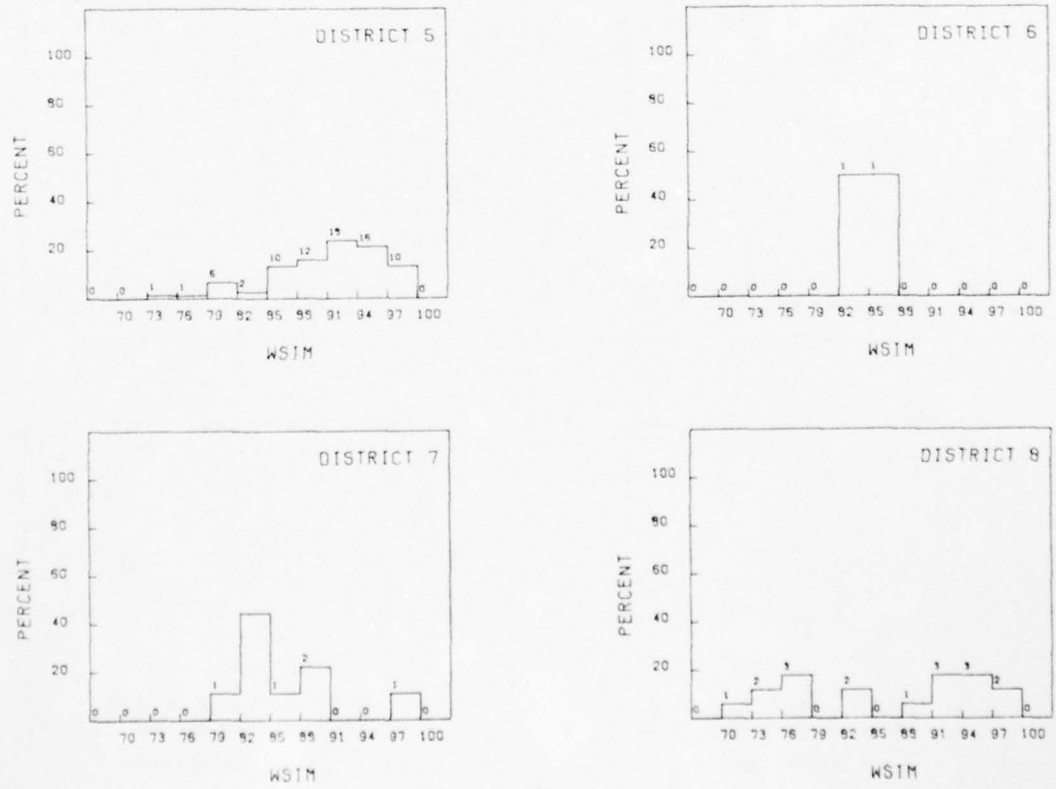


Figure 17. Water Separation Index, Modified



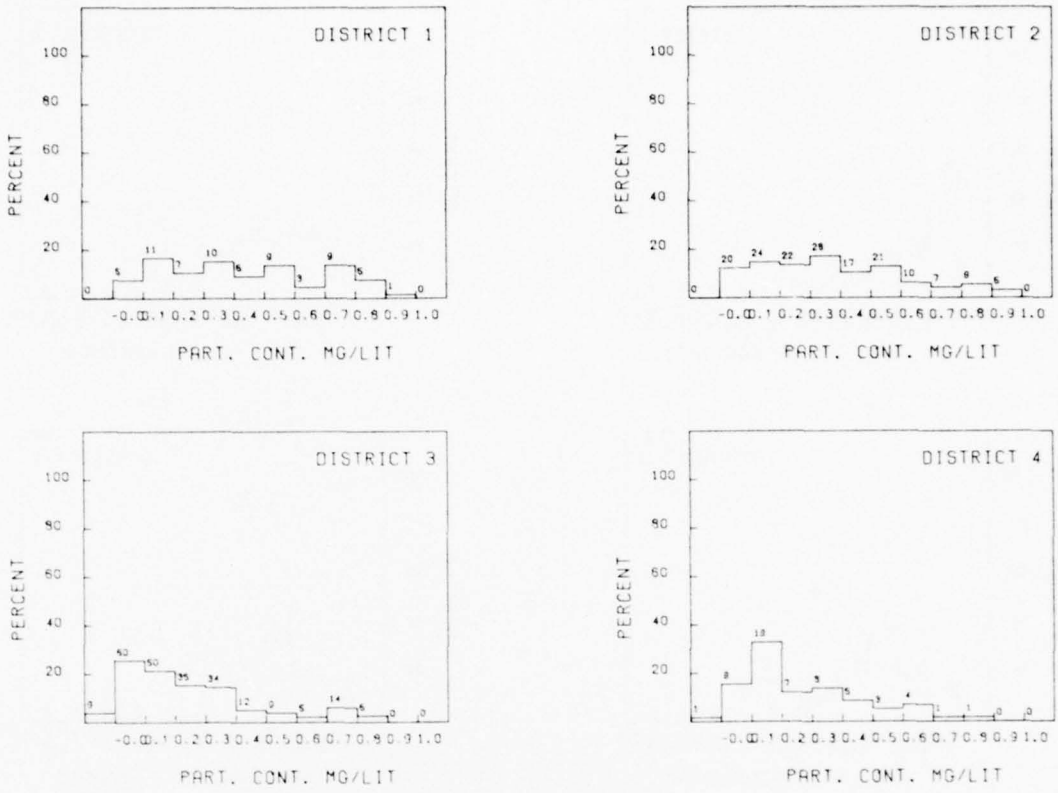
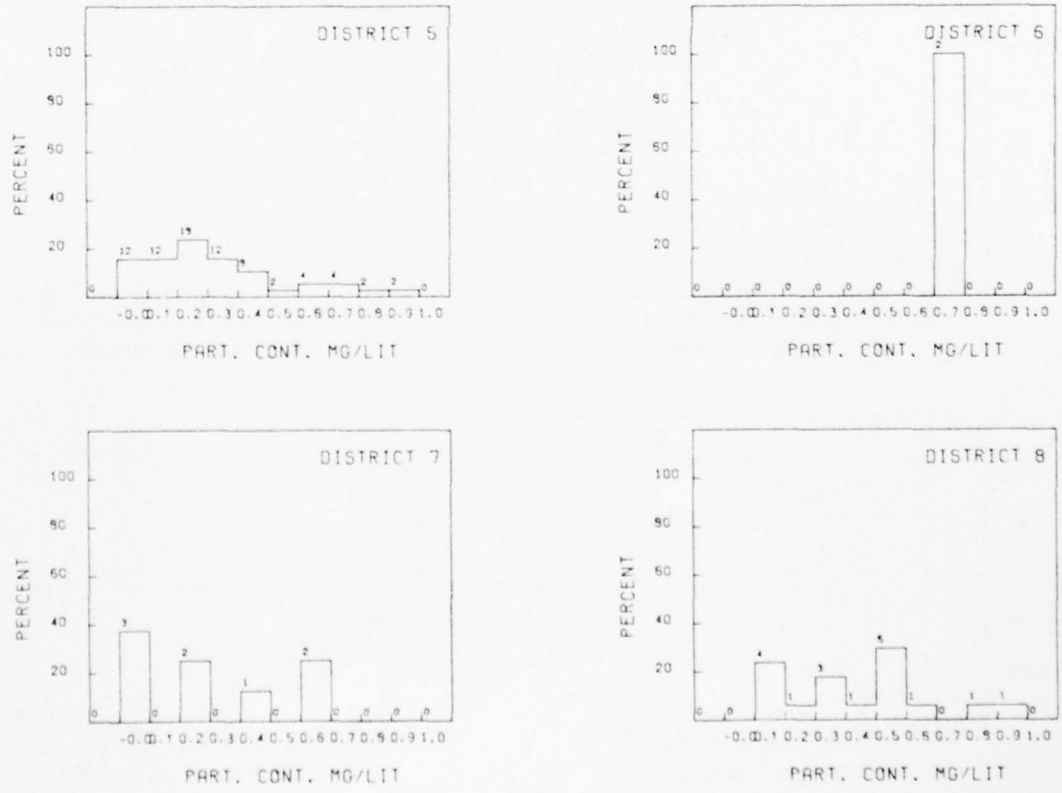


Figure 18. Particulate Contaminate



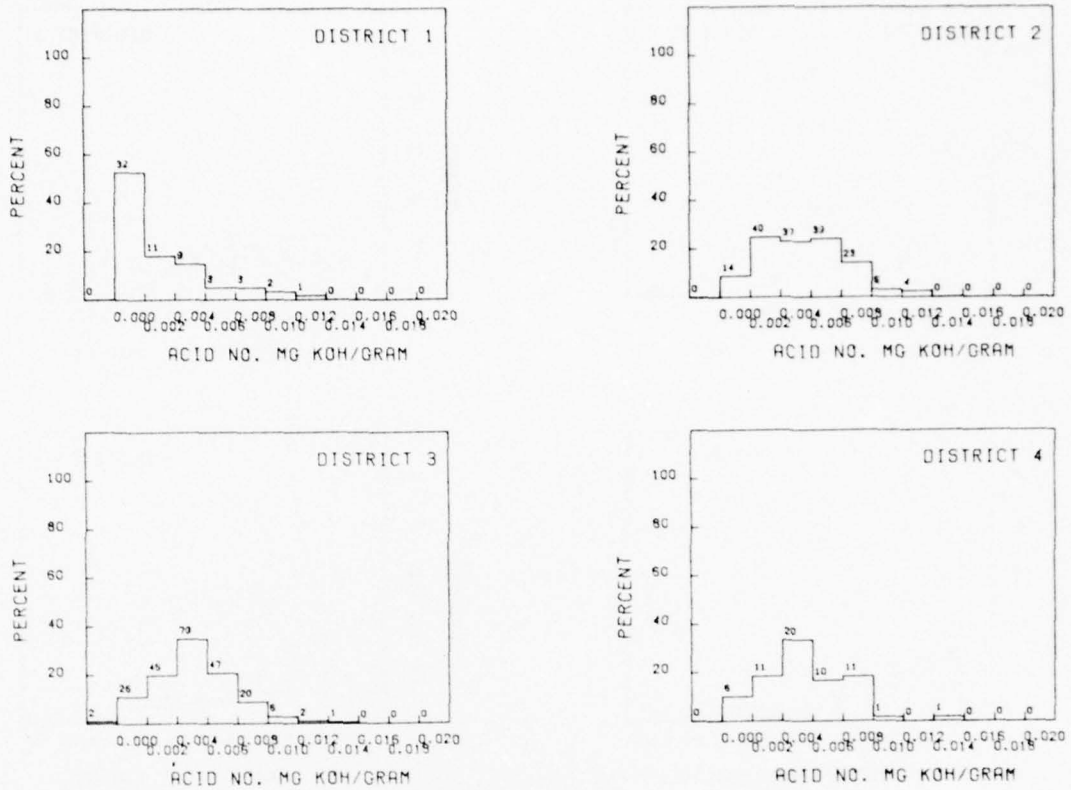
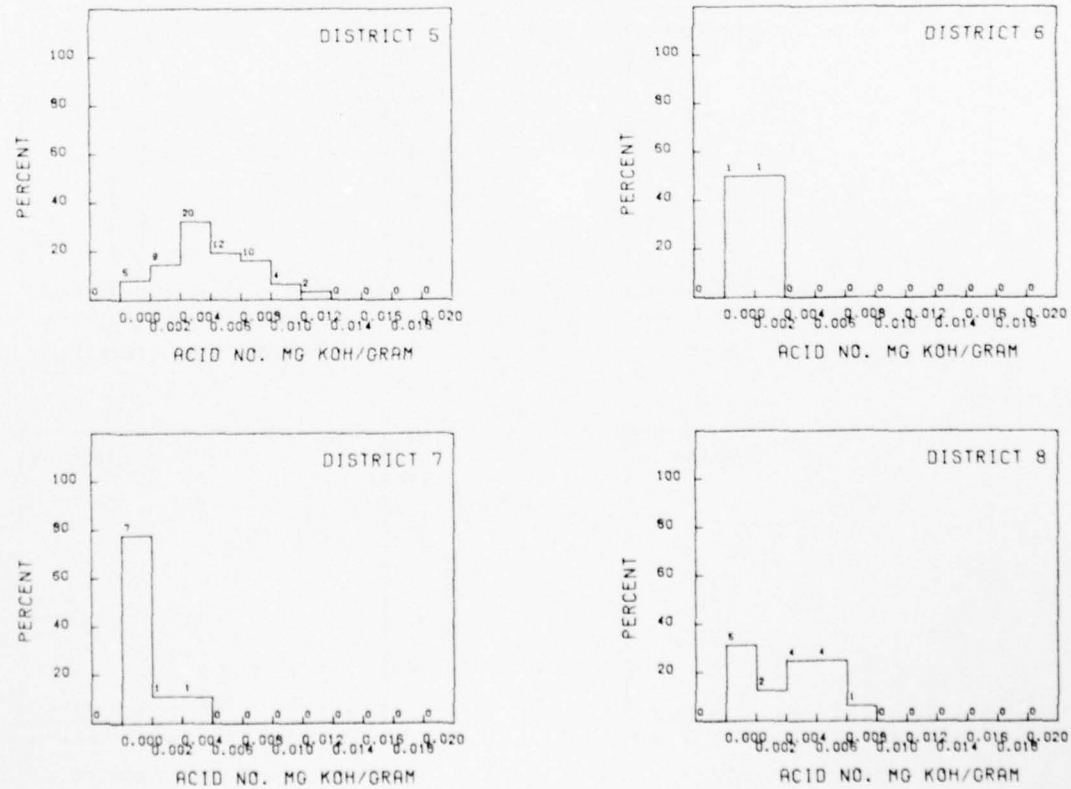


Figure 19. Acid Number



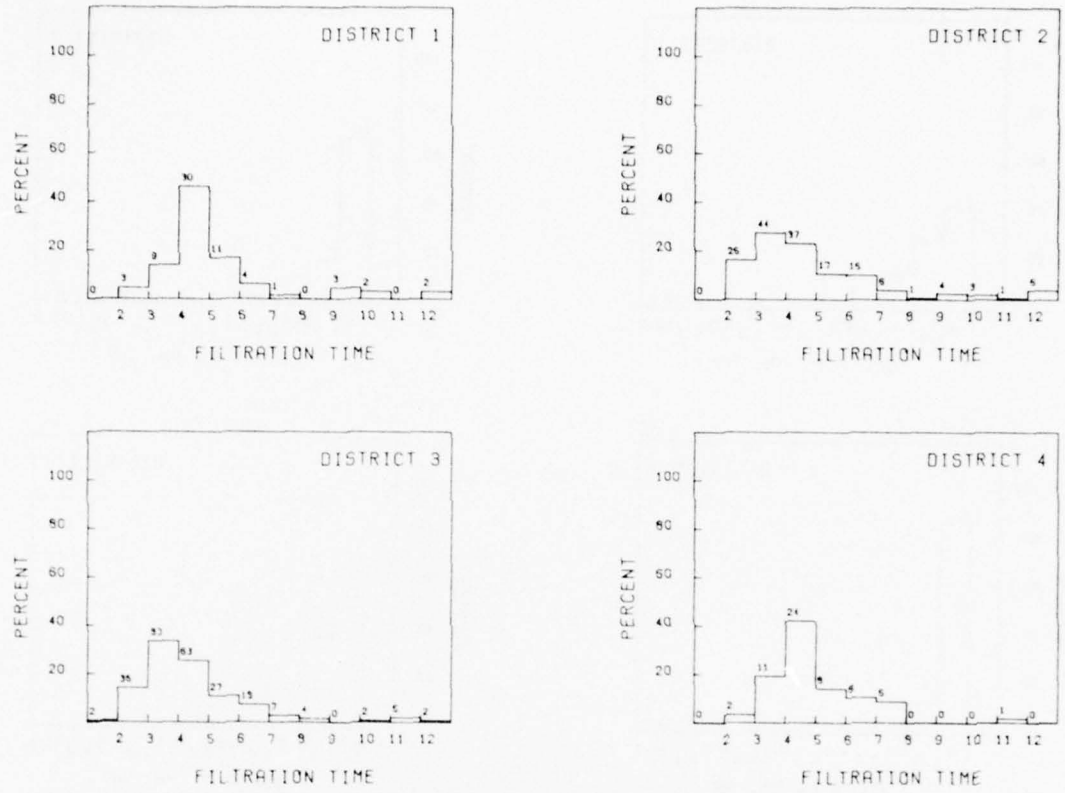
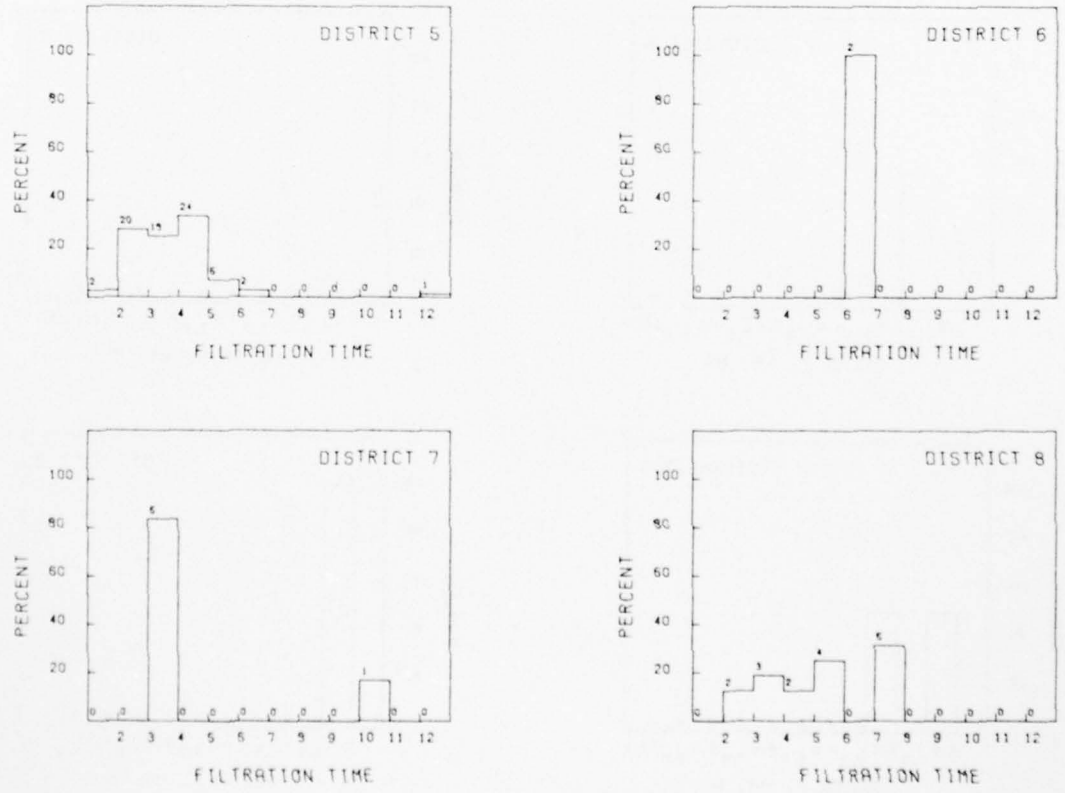


Figure 20. Filtration Time



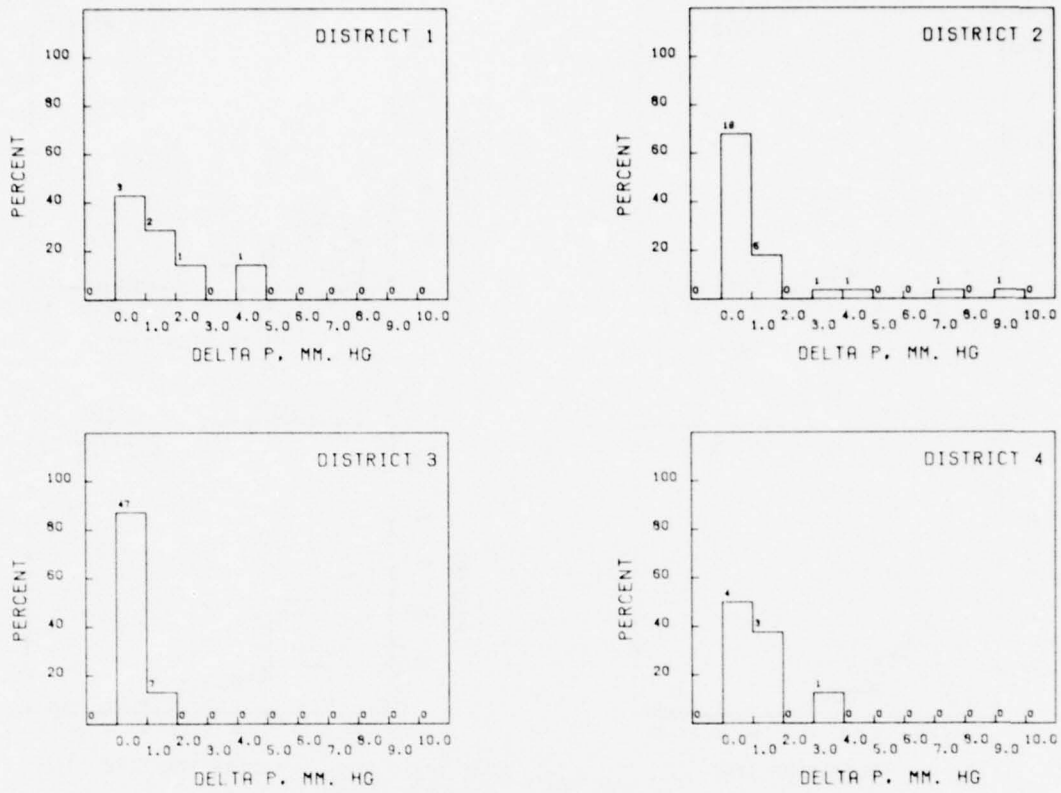
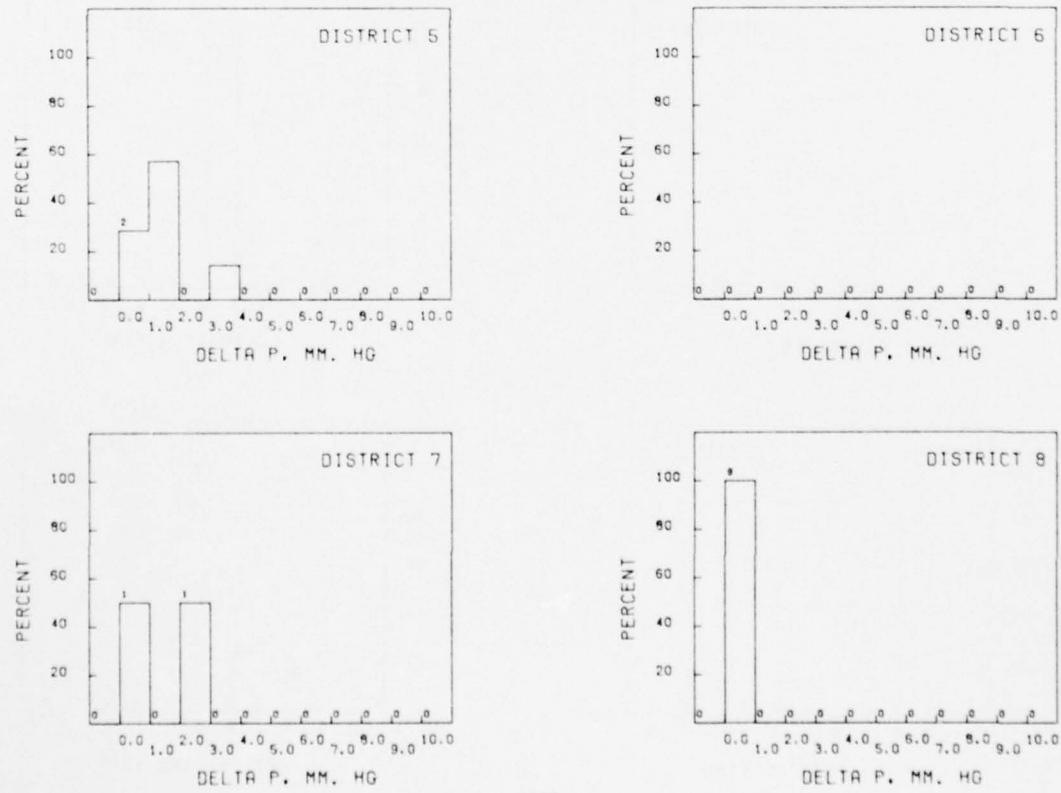


Figure 21. Thermal Stability, ΔP



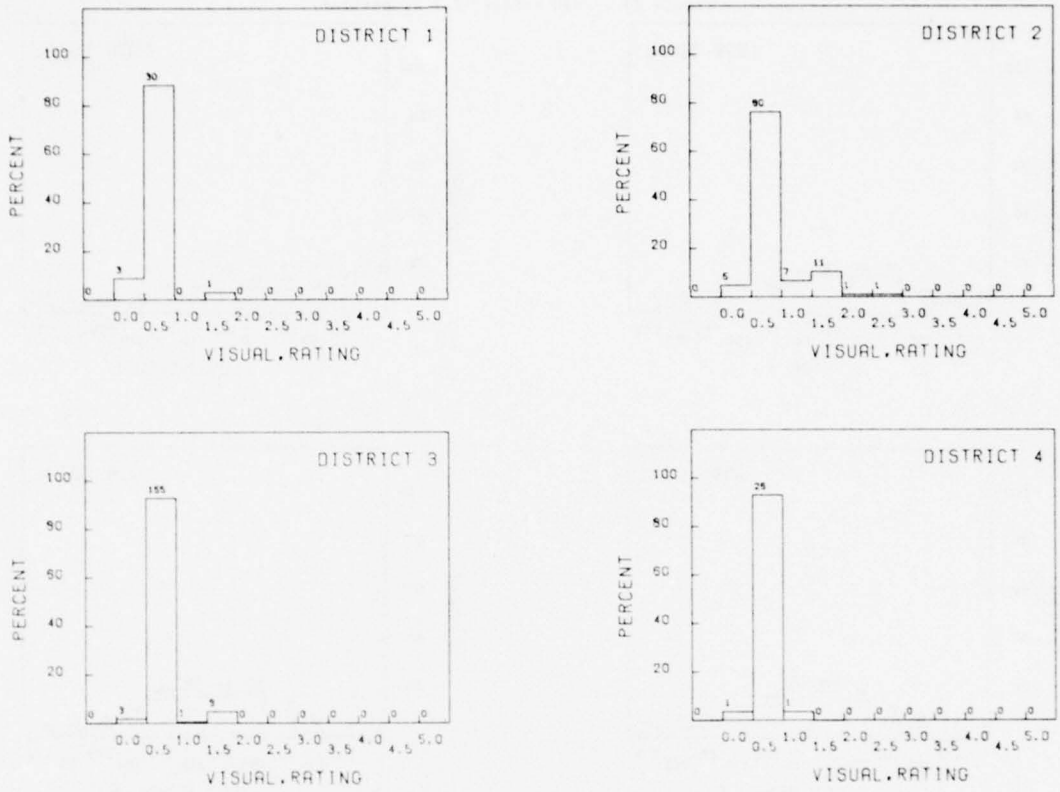


Figure 22. Thermal Stability, Tube Color Code

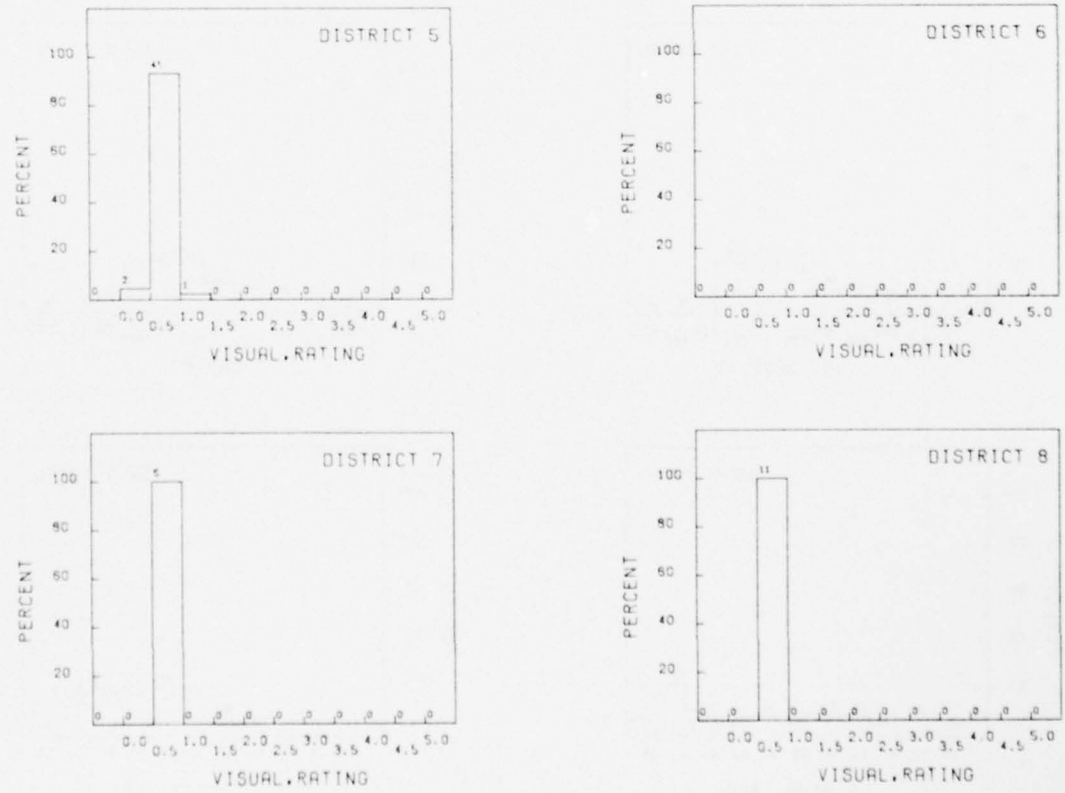
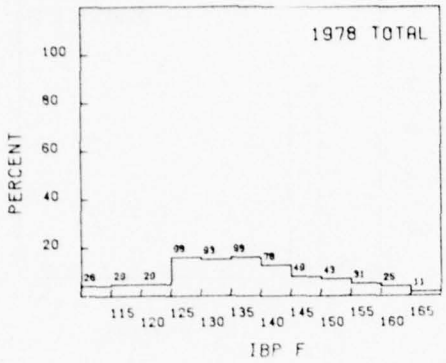
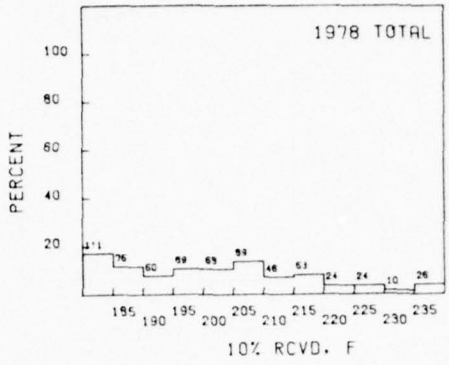
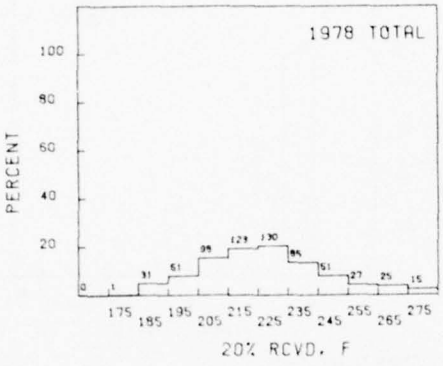
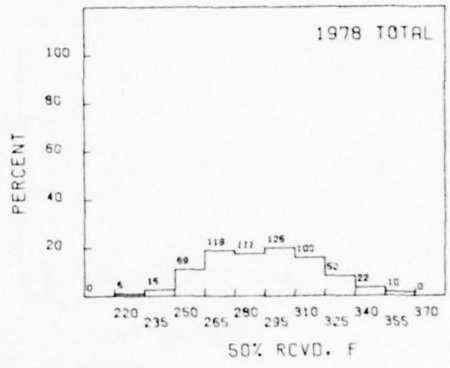


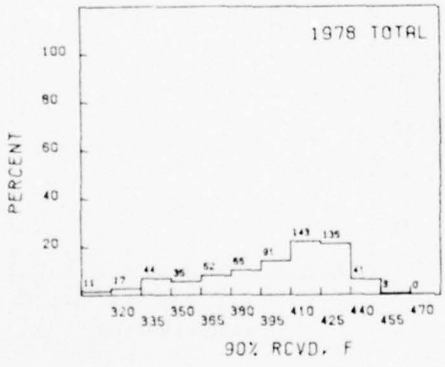
Figure 23. 1978 Totals (All Properties)

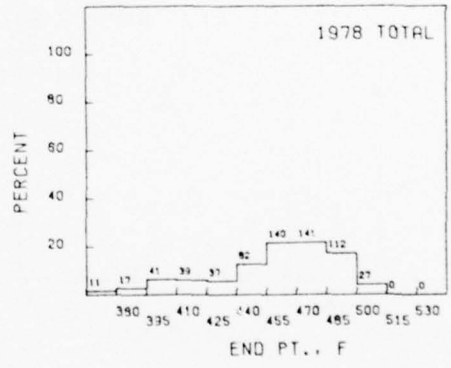


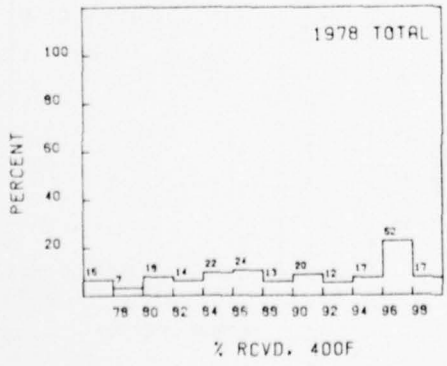


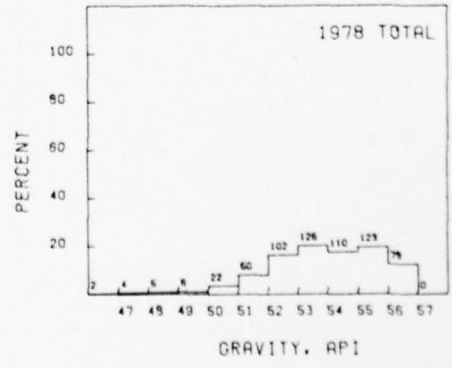


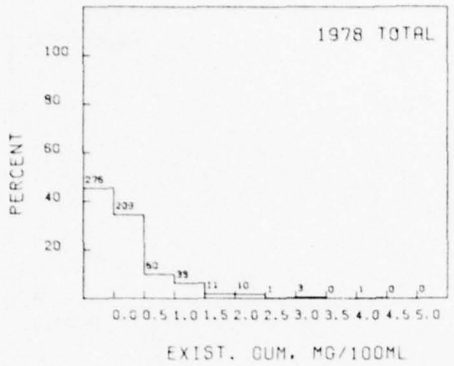








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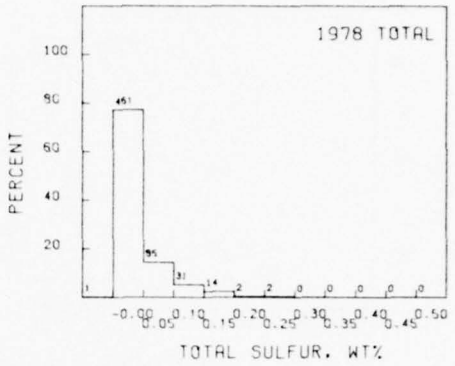
EXIST. GUM, MG/100ML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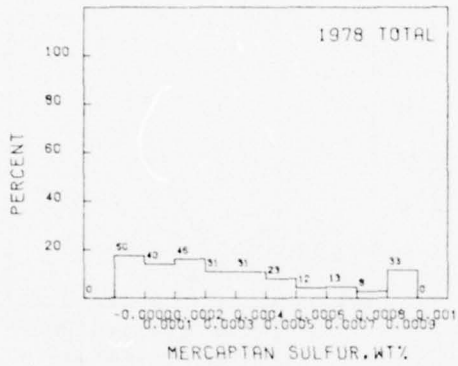
TOTAL SULFUR, WT%


1978 TOTAL
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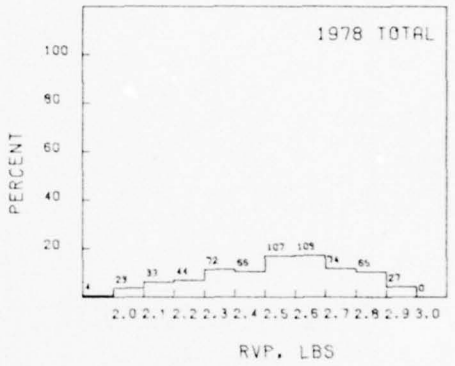
MERCAPTAN SULFUR, WT%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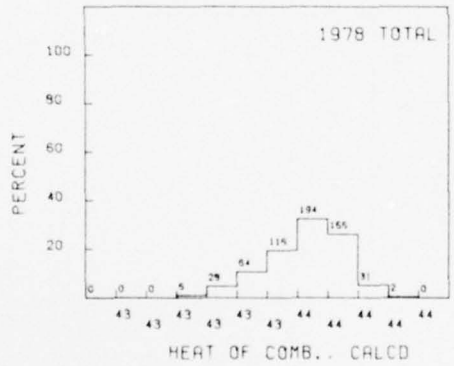
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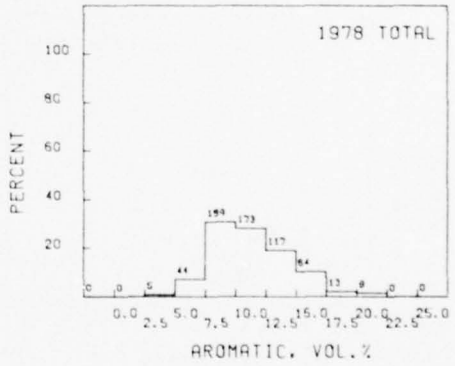
HEAT OF COMB., CALCD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133
117
64
13
8
0
0
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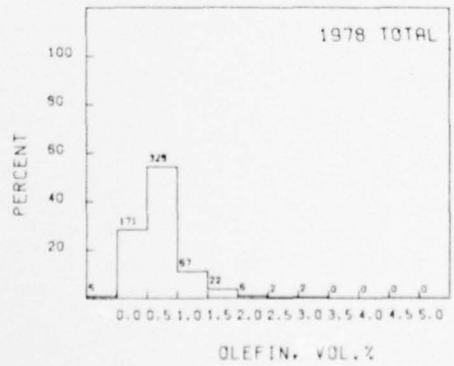
AROMATIC, VOL.%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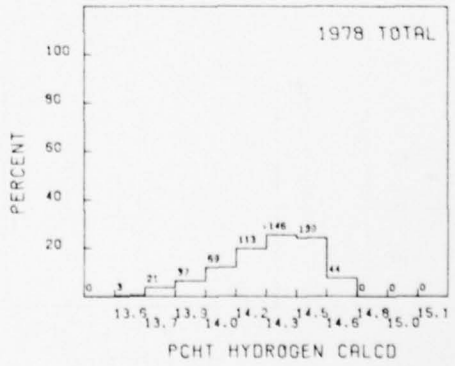
1978 TOTAL
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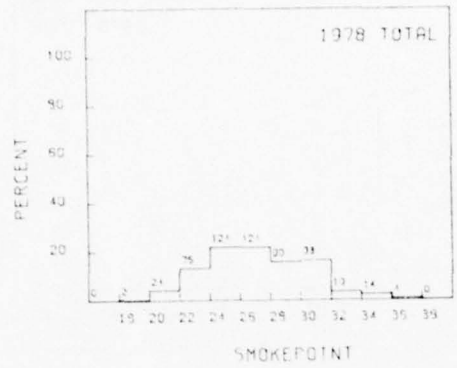

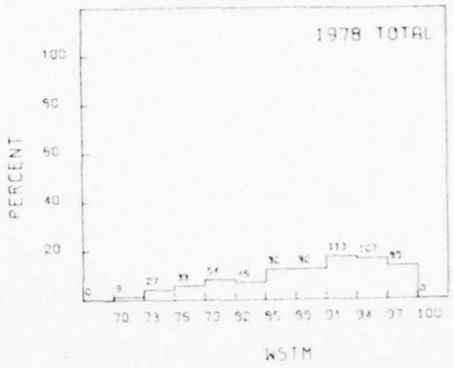

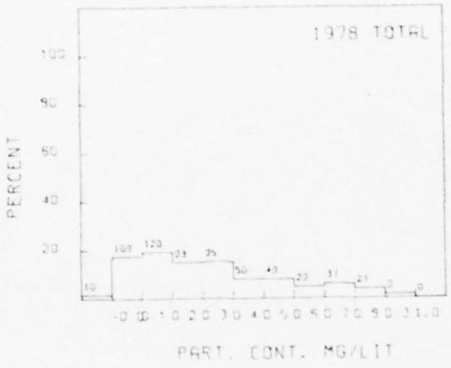

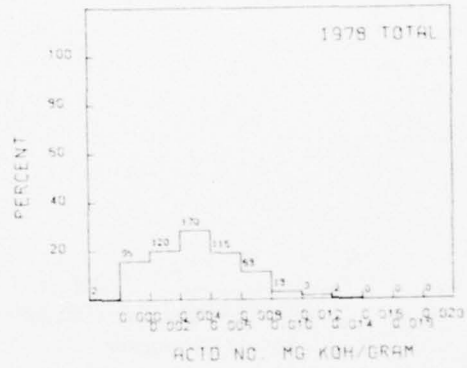

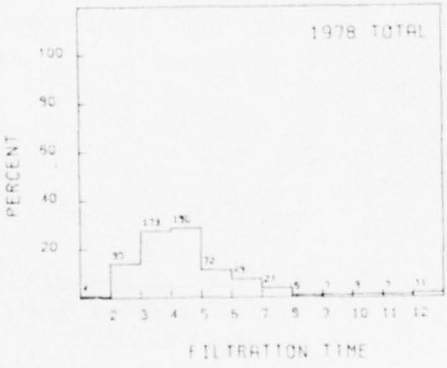

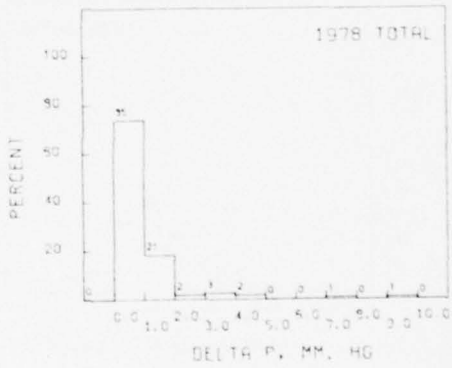

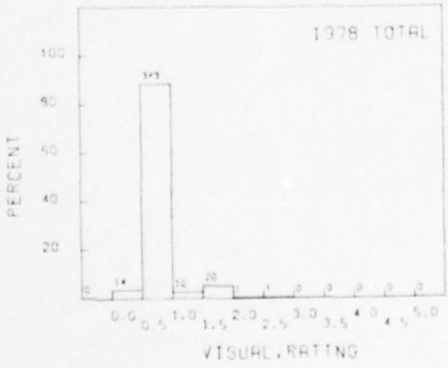

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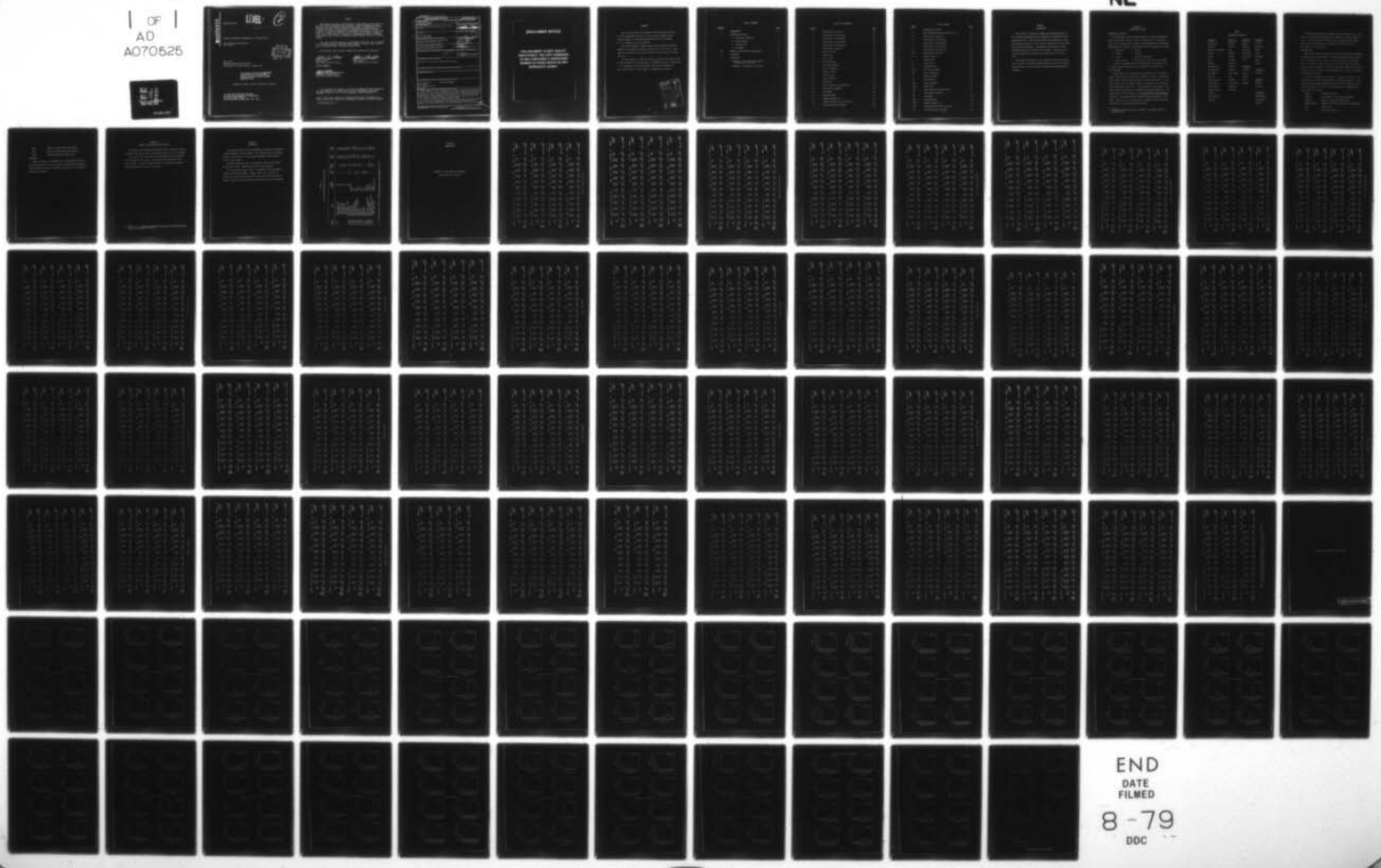

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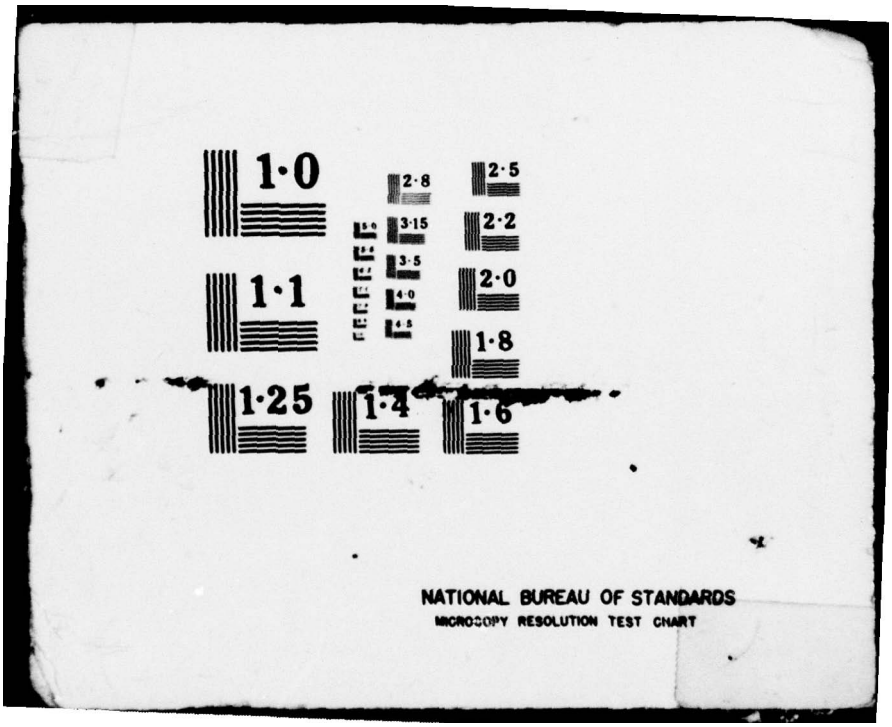
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LEVEL II

AFAPL-TR-79-2040

PHYSICAL AND CHEMICAL PROPERTIES OF JP-4 FUEL FOR 1978

Fuels and Lubrication Division
Fuels Branch

April 1979
TECHNICAL REPORT AFAPL-TR-79-2040
Final Report for Period January - December 1978

Approved for public release; distribution unlimited

AIR FORCE AERO PROPULSION LABORATORY
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This technical report has been reviewed and is approved for publication.

Blaine A. Heitkamp
Fuels Branch
Fuels and Lubrication Division

Arthur V. Churchill, Chief
Fuels Branch
Fuels and Lubrication Division

FOR THE COMMANDER

Blackwell C. Dunnam, Chief
Fuels and Lubrication Division

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JP-4 Fuel
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Random samples of 651 fuel inspection reports on JP-4 fuel have been analyzed for the calendar year 1978. Determination of average properties and frequency distribution of these properties has been undertaken. Properties selected were twenty-three different parameters which coincide with JP-4 fuel specifications (MIL-T-5624K). Through comparison of previous reports, specifically 1975, it can be noted that no major fluctuations have occurred.

In compiling the data, all reports were given equal weight regardless of what quantity of fuel was represented. Also, this year the only method used for testing fuel thermal stability was the JFTOT (ASTM Method D 3241) Fuel Coker.

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FOREWORD

This JP-4 fuels report was prepared by the Fuels Branch of the Air Force Aero Propulsion Laboratory, Air Force Systems Command, Wright-Patterson AFB, OH. The work was performed under work unit 304805FL. Mr. B. A. Heitkamp was project engineer.

This report presents a computer generated and assembled statistical summary of the chemical and physical properties of JP-4 Jet Fuel. These fuels were procured by the Defense Fuel Supply Center during the calendar year 1978.

The author wishes to extend his gratitude to Miss Cheryl Florence and Mr. Kermit Redmon for their assistance in assembling the data. Appreciation is also extended to Miss Elaine Baldwin. Miss Charlene Diamond, and Mrs. Linda Phillips for their support in assembling this report.

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SECTION I

INTRODUCTION

This report is a statistical summary of assorted properties of JP-4 Aviation fuel delivered to the Department of Defense during the calender year 1978. These various properties are recorded on a fuel batch inspection report, a copy of which is submitted to the Air Force Aero Propulsion Laboratory. Approximately twenty percent of these inspection reports are the basis for this report. Similar fuel reports were presented in the years 1963 through 1967, 1970, 1972, & 1975.

This report will provide a quick reference on JP-4 fuel quality. One will be able to identify numerous ranges of properties along with their incidence, and also identify differences between geographical districts.

SECTION II
ORGANIZATION OF DATA

GEOGRAPHICAL DISTRICTS

Fuel inspection reports have been separated into eight geographical districts according to point of origin. These districts are listed in Table I and are essentially the same as those designated by the Petroleum Administration for Defense. These districts may be summarized as follows:

1. East Coast
2. Midwest
3. South
4. Rocky Mountain
5. Pacific
6. Far East
7. Europe and Near East
8. South America, West Indies, and Canada

It should be emphasized that this classification is based on point of origin (refinery location) and not destination or point of use.

TESTS SELECTED

Twenty-three of the inspection tests required by the JP-4 specification, MIL-T-5624K, were selected for analysis of results. These tests differ slightly from the tests analyzed in the previous report. In this year's report, the fuel thermal stability is measured by the JFTOT Fuel Coker (ASTM Method D 3241) only. A new parameter has been added as well. The percentage of Hydrogen is calculated from submitted properties. The calculation for this is found in the 1976 Annual Book of ASTM Standards, Volume 25[1]. Also, smoke volatility index has been eliminated as a parameter. Finally, the units for net heat of combustion have been changed from BTU's/lb to mega joules/kilogram (MJ/kg).

---

1 ASTM D3343, Standard Method for Estimation of Hydrogen Content of Aviation Fuels.

TABLE I

GEOGRAPHICAL DISTRICTS

DISTRICT 1	DISTRICT 2	DISTRICT 3	DISTRICT 5
Connecticut	Illinois	Alabama	Arizona
Delaware	Indiana	Arkansas	California
District of Columbia	Iowa	Louisiana	Nevada
Florida	Kansas	Mississippi	Oregon
Georgia	Kentucky	New Mexico	Washington
Maine	Michigan	Texas	Alaska
Maryland	Minnesota		Hawaii
Massachusetts	Missouri	DISTRICT 4	
New Hampshire	Nebraska	Colorado	DISTRICT 6
New Jersey	North Dakota	Idaho	Far East
New York	Ohio	Montana	
North Carolina	Oklahoma	Utah	DISTRICT 7
Pennsylvania	South Dakota	Wyoming	Europe
Rhode Island	Tennessee		Near East
South Carolina	Wisconsin		
Vermont			DISTRICT 8
West Virginia			South America
Virginia			West Indies
			Canada

The ASTM method number and the ASTM precision statements refer to those found in the previously mentioned book of standards, including Volumes 23 and 24. The specification test limits refer to publication MIL-T-5624K dated 1 April 1976 and are much the same as the previous edition of MIL-T-5624J of 30 October 1973.

TABULATED DATA

Many reports submitted contained values which were invalid or ambiguous, and therefore the value was waived. Mercaptan Sulfur was excluded in about 50% of the reports. This is due to the fact that there is an alternate test, called the Doctor Test, which is also acceptable under MIL-T-5624K. Recovery at 400°F, though still reported by many fuel suppliers and included in Table XXV, is no longer a required parameter and is therefore eliminated from the District Report.

Tables III through XXIV of Appendix A are computer printouts of the distribution, mean, and standard deviation for each fuel property. These tables are each arranged by geographical district while Table XXV gives the 1978 overall population totals for each fuel property. Nomenclature for these tables is as follows:

SIGMA	Standard deviation
REPORTS	Total number of fuel reports represented.
SAMPLES	Number of reports with valid value.
MISSING VALUES	Number of reports with missing or invalid values.
GTR	Greater than.
LEQ	Less than or equal to.

FREQ	Number of values within limits shown.
PCNT	Percent of values within limits shown.
ACUM	Cumulative percent to upper limit.

HISTOGRAMS

Figures 1 through 24 of Appendix B are computer-generated plots of the distribution data given in Tables III through XXV of Appendix A. These histograms represent a convenient visualization of the property frequency distributions.

SECTION III

METHOD OF DATA REDUCTION AND ANALYSIS

The method of data reduction and analysis used in this year's report is basically the same as used in the previous report by Mr. L. C. Angello[2].

Fuel reports from one complete week were separated from the monthly total and used for this report. This procedure was followed for each month in 1978. In this way manpower output is reduced without significantly affecting the accuracy of the results.

---

2 Angello, L. C., Physical and Chemical Properties of JP-4 Fuel for 1975, Wright-Patterson AFB, OH 1976.

SECTION IV
DISCUSSION

As previously stated, the data presented in this report are based on a random sampling of monthly reports. Since these reports are provided without a specification of fuel quantity represented, equal weight is carried by each sample.

As could be expected, some of the reported values will be beyond specification limits. When this occurs, the value is waived.

As in the previous report (1975), no systematic effort was made to identify chronological trends. However, Table II will identify the differences in mean values between the previous report and this year's report, along with identifying the testing method and the units reported.

TABLE II

MIL-T-5624K SPECIFICATION LIMITS FOR JP-4

METHOD	TEST	UNITS REPORTED	SPEC LIMITS MIN.	SPEC LIMITS MAX.	1978 MEAN	1975 MEAN
D 86	Distillation, IBP	°F	--	--	138	141
	10% Recovered	°F	--	--	201	211
	20% Recovered	°F	--	293	228	233
	50% Recovered	°F	--	374	295	295
	90% Recovered	°F	--	473	401	403
	End Point	°F	--	518	459	457
	% Recovered, 400°F	%	--	--	90.1	86.8
D 1298	API Gravity	°API	45.0	57.0	53.9	53.9
D 381	Existent Gum	mg/100 ml	--	7.0	.8	.6
D 1552	Total Sulfur	wt %	--	.4	.042	.05
D 1323	Mercaptan Sulfur	wt %	--	.001	.0005	.0004
D 323	Reid Vapor Pressure	psi	2.0	3.0	2.6	2.6
D 1405	Net Heat of Combustion	MJ/Kg	42.8	--	43.5	43.5
D 1319	Aromatics	Vol %	--	25.0	11.4	10.9
D 1319	Olefins	Vol %	--	5.0	.8	.8
D 1322	Smoke Point	mm	20.0	--	27.6	28.1
(c)	% Hydrogen	Wt. %	13.6	--	14.36	--
D 2550	WISM	WISM	70.0		90.0	90.0
D 2776	Particulate Contaminant	mg/liter	--	1.0	.37	.4
D 3242	Total Acid Number	mg KOH/g	--	.015	.006	.006
D 2276	Filtration Time, 1 gallon	minutes	--	15.0	5.1	5.0
D 3241	Thermal Stability ΔP	mm Hg	--	25.0	1.1	.83
	Tube Color Code	ASTM Color Code	--	<3	1.0	.84

(c) calculated from equation in 1976 Annual Book of ASTM Standards, Volume 25.

SECTION V
CONCLUSIONS

APPENDIX A - Mean Values and Frequency Distribution for 1978 Data

DISTRICT 1 DISTILLATN INIT. BOILING PT. DEG F MEAN 147. SIGMA 14.5 REPORT 66. SAMPLES 66

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	2	1	0	4	6	9	7	9	5	8	12	3	0
PCNT	3.03	1.52	0.00	6.06	9.09	13.64	10.61	13.64	7.58	12.12	18.18	4.55	0.00
ACUM	3.03	4.55	4.55	10.61	19.70	33.33	43.94	57.58	65.15	77.27	95.45	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN INIT. BOILING PT. DEG F MEAN 140. SIGMA 13.8 REPORT 169. SAMPLES 168

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	6	5	10	24	29	28	15	14	11	12	7	7	1
PCNT	3.57	2.98	5.95	14.29	17.26	16.67	8.93	8.33	6.55	7.14	4.17	4.17	.59
ACUM	3.57	6.55	12.50	26.79	44.05	60.71	69.64	77.98	84.52	91.67	95.83	100.00	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN INIT. BOILING PT. DEG F MEAN 135. SIGMA 12.0 REPORT 251. SAMPLES 213

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	13	13	11	46	27	30	29	17	17	6	2	0	38
PCNT	6.10	6.10	5.16	22.54	12.68	14.08	13.62	7.98	7.98	2.82	.94	0.00	15.14
ACUM	6.10	12.21	17.37	39.91	52.58	66.67	80.28	88.26	96.24	99.06	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN INIT. BOILING PT. DEG F MEAN 133. SIGMA 11.6 REPORT 60. SAMPLES 59

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	4	6	4	11	9	8	9	4	4	0	0	0	1
PCNT	6.78	10.17	6.78	18.64	15.25	13.56	15.25	6.78	6.78	0.00	0.00	0.00	1.67
ACUM	6.78	16.95	23.73	42.37	57.63	71.19	86.44	93.22	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table III. Distillation, Initial BP

DISTRICT 5 DISTILLATN INIT. BOILING PT. DEG F MEAN 139. SIGMA 11.3 REPORT 77. SAMPLES 76

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	1	2	4	7	19	16	11	3	5	3	4	1	1
PCNT	1.32	2.63	5.26	9.21	25.00	21.05	14.47	3.95	6.58	3.95	5.26	1.32	1.30
ACUM	1.32	3.95	9.21	18.42	43.42	64.47	78.95	82.89	89.47	93.42	98.68	100.00	PRCNT OF REPORTS

DISTRICT 6 DISTILLATN INIT. BOILING PT. DEG F MEAN 125. SIGMA 6.4 REPORT 2. SAMPLES 2

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	0	1	0	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	50.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 DISTILLATN INIT. BOILING PT. DEG F MEAN 137. SIGMA 11.2 REPORT 9. SAMPLES 9

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	0	1	0	3	0	2	1	1	0	1	0	0	0
PCNT	0.00	11.11	0.00	33.33	0.00	22.22	11.11	11.11	0.00	11.11	0.00	0.00	0.00
ACUM	0.00	11.11	11.11	44.44	44.44	66.67	77.78	88.89	88.89	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 DISTILLATN INIT. BOILING PT. DEG F MEAN 142. SIGMA 6.6 REPORT 17. SAMPLES 17

	LEQ 115.	GTR 115. LEQ 120.	GTR 120. LEQ 125.	GTR 125. LEQ 130.	GTR 130. LEQ 135.	GTR 135. LEQ 140.	GTR 140. LEQ 145.	GTR 145. LEQ 150.	GTR 150. LEQ 155.	GTR 155. LEQ 160.	GTR 160. LEQ 165.	GTR 165.	MISSING VALUES
FREQ	0	0	0	0	3	5	6	1	1	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	17.65	29.41	35.29	5.88	5.88	5.88	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	17.65	47.06	82.35	88.24	94.12	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 DISTILLATN 10% RECOVERED, DEG F MEAN 195. SIGMA 16.5 REPORT 66. SAMPLES 66

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	18	7	5	11	12	8	1	0	0	0	3	1	0
PCNT	27.27	10.61	7.58	16.67	18.18	12.12	1.52	0.00	0.00	0.00	4.55	1.52	0.00
ACUM	27.27	37.88	45.45	62.12	80.30	92.42	93.94	93.94	93.94	93.94	98.48	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN 10% RECOVERED, DEG F MEAN 209. SIGMA 17.4 REPORT 169. SAMPLES 168

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	10	20	13	12	19	26	12	20	8	12	3	13	1
PCNT	5.95	11.90	7.74	7.14	11.31	15.48	7.14	11.90	4.76	7.14	1.79	7.74	.59
ACUM	5.95	17.86	25.60	32.74	44.05	59.52	66.67	78.57	83.33	90.48	92.26	100.00	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN 10% RECOVERED, DEG F MEAN 196. SIGMA 21.0 REPORT 251. SAMPLES 248

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	69	32	17	24	16	29	19	24	5	2	1	10	3
PCNT	27.82	12.90	6.85	9.68	6.45	11.69	7.66	9.68	2.02	.81	.40	4.03	1.20
ACUM	27.82	40.73	47.58	57.26	63.71	75.40	83.06	92.74	94.76	95.56	95.97	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN 10% RECOVERED, DEG F MEAN 202. SIGMA 16.6 REPORT 60. SAMPLES 60

		GTR 185.	GTR 190.	GTR 195.	GTR 200.	GTR 205.	GTR 210.	GTR 215.	GTR 220.	GTR 225.	GTR 230.	GTR 235.	MISSING VALUES
	LEQ 185.	LEQ 190.	LEQ 195.	LEQ 200.	LEQ 205.	LEQ 210.	LEQ 215.	LEQ 220.	LEQ 225.	LEQ 230.	LEQ 235.		
FREQ	9	8	4	8	7	5	6	4	4	2	1	2	0
PCNT	15.00	13.33	6.67	13.33	11.67	8.33	10.00	6.67	6.67	3.33	1.67	3.33	0.00
ACUM	15.00	28.33	35.00	48.33	60.00	68.33	78.33	85.00	91.67	95.00	96.67	100.00	PRCNT OF REPORTS

Table IV. Distillation, 10% Recovered

DISTRICT 5 DISTILLATN 10% RECOVERED, DEG F MEAN 206. SIGMA 12.2 REPORT 77. SAMPLES 76

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	3	3	7	13	12	16	5	4	6	5	2	0	1
PCNT	3.95	3.95	9.21	17.11	15.79	21.05	6.58	5.26	7.89	6.58	2.63	0.00	1.30
ACUM	3.95	7.89	17.11	34.21	50.00	71.05	77.63	82.89	90.79	97.37	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 DISTILLATN 10% RECOVERED, DEG F MEAN 218. SIGMA 14.1 REPORT 2. SAMPLES 2

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	0	0	0	0	0	1	0	0	0	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	50.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DISTILLATN 10% RECOVERED, DEG F MEAN 206. SIGMA 12.3 REPORT 9. SAMPLES 9

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	0	2	1	0	1	1	2	1	1	0	0	0	0
PCNT	0.00	22.22	11.11	0.00	11.11	11.11	22.22	11.11	11.11	0.00	0.00	0.00	0.00
ACUM	0.00	22.22	33.33	33.33	44.44	55.56	77.78	88.89	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DISTILLATN 10% RECOVERED, DEG F MEAN 201. SIGMA 14.5 REPORT 17. SAMPLES 16

	LEQ 185.	GTR 185. LEQ 190.	GTR 190. LEQ 195.	GTR 195. LEQ 200.	GTR 200. LEQ 205.	GTR 205. LEQ 210.	GTR 210. LEQ 215.	GTR 215. LEQ 220.	GTR 220. LEQ 225.	GTR 225. LEQ 230.	GTR 230. LEQ 235.	GTR 235.	MISSING VALUES
FREQ	2	3	3	1	1	3	1	0	0	2	0	0	1
PCNT	12.50	18.75	18.75	6.25	6.25	18.75	6.25	0.00	0.00	12.50	0.00	0.00	5.88
ACUM	12.50	31.25	50.00	56.25	62.50	81.25	87.50	87.50	87.50	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 DISTILLATN 20% RECOVERED, DEG F MEAN 210. SIGMA 17.1 REPORT 66. SAMPLES 65

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	1	8	7	5	21	18	1	3	6	1	0	1
PCNT	0.00	1.54	12.31	10.77	7.69	32.31	27.69	1.54	4.62	9.00	1.54	0.00	1.52
ACUM	0.00	1.54	13.85	24.62	32.31	64.62	92.31	93.85	98.46	98.46	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN 20% RECOVERED, DEG F MEAN 232. SIGMA 20.7 REPORT 169. SAMPLES 159

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	0	2	4	31	22	44	24	11	5	3	7	10
PCNT	0.00	0.00	1.26	2.52	19.50	13.84	27.67	15.09	6.92	3.14	5.66	4.40	5.92
ACUM	0.00	0.00	1.26	3.77	23.27	37.11	64.78	79.87	86.79	89.94	95.60	100.00	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN 20% RECOVERED, DEG F MEAN 226. SIGMA 22.5 REPORT 251. SAMPLES 250

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	0	21	29	44	35	26	48	21	11	11	4	1
PCNT	0.00	0.00	8.40	11.60	17.60	14.00	10.40	19.20	8.40	4.40	4.40	1.60	.40
ACUM	0.00	0.00	8.40	20.00	37.60	51.60	62.00	81.20	89.60	94.00	98.40	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN 20% RECOVERED, DEG F MEAN 229. SIGMA 23.3 REPORT 60. SAMPLES 60

		GTR 175.	GTR 185.	GTR 195.	GTR 205.	GTR 215.	GTR 225.	GTR 235.	GTR 245.	GTR 255.	GTR 265.	GTR 275.	MISSING VALUES
	LEQ 175.	LEQ 185.	LEQ 195.	LEQ 205.	LEQ 215.	LEQ 225.	LEQ 235.	LEQ 245.	LEQ 255.	LEQ 265.	LEQ 275.		
FREQ	0	0	0	9	11	13	7	4	7	4	1	4	0
PCNT	0.00	0.00	0.00	15.00	18.33	21.67	11.67	6.67	11.67	6.67	1.67	6.67	0.00
ACUM	0.00	0.00	0.00	15.00	33.33	55.00	66.67	73.33	85.00	91.67	93.33	100.00	PRCNT OF REPORTS

Table V. Distillation, 20% Recovered

DISTRICT 5 DISTILLATN 20% RECOVERED, DEG F MEAN 231. SIGMA 15.6 REPORT 77. SAMPLES 77

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	3	2	5	22	28	5	6	7	2	0	0
PCNT	0.00	0.00	0.00	2.60	6.49	28.57	36.36	6.49	7.79	9.09	2.60	0.00	0.00
ACUM	0.00	0.00	0.00	2.60	9.09	37.66	74.03	80.52	88.31	97.40	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 DISTILLATN 20% RECOVERED, DEG F MEAN 244. SIGMA 38.2 REPORT 2. SAMPLES 2

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	0	0	0	1	0	0	0	0	1	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	50.00	50.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 DISTILLATN 20% RECOVERED, DEG F MEAN 230. SIGMA 12.0 REPORT 9. SAMPLES 9

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	0	0	0	4	2	2	1	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	44.44	22.22	22.22	11.11	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	44.44	66.67	88.89	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 DISTILLATN 20% RECOVERED, DEG F MEAN 229. SIGMA 12.3 REPORT 17. SAMPLES 16

	LEQ 175.	GTR 175. LEQ 185.	GTR 185. LEQ 195.	GTR 195. LEQ 205.	GTR 205. LEQ 215.	GTR 215. LEQ 225.	GTR 225. LEQ 235.	GTR 235. LEQ 245.	GTR 245. LEQ 255.	GTR 255. LEQ 265.	GTR 265. LEQ 275.	GTR 275.	MISSING VALUES
FREQ	0	0	0	0	2	5	5	2	2	0	0	0	1
PCNT	0.00	0.00	0.00	0.00	12.50	31.25	31.25	12.50	12.50	0.00	0.00	0.00	5.88
ACUM	0.00	0.00	0.00	0.00	12.50	43.75	75.00	87.50	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 DISTILLATN 50% RECOVERED, DEG F MEAN 305. SIGMA 21.7 REPORT 66. SAMPLES 66

		GTR 220.	GTR 235.	GTR 250.	GTR 265.	GTR 280.	GTR 295.	GTR 310.	GTR 325.	GTR 340.	GTR 355.	GTR 370.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	220.	235.	250.	265.	280.	295.	310.	325.	340.	355.	370.		
FREQ	0	0	0	0	5	21	20	8	5	6	1	0	0
PCNT	0.00	0.00	0.00	0.00	7.58	31.82	30.30	12.12	7.58	9.09	1.52	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	7.58	39.39	69.70	81.82	89.39	98.48	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 DISTILLATN 50% RECOVERED, DEG F MEAN 285. SIGMA 22.6 REPORT 169. SAMPLES 157

		GTR 220.	GTR 235.	GTR 250.	GTR 265.	GTR 280.	GTR 295.	GTR 310.	GTR 325.	GTR 340.	GTR 355.	GTR 370.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	220.	235.	250.	265.	280.	295.	310.	325.	340.	355.	370.		
FREQ	0	1	0	26	56	36	17	11	8	0	2	0	12
PCNT	0.00	.64	0.00	16.56	35.67	22.93	10.83	7.01	5.10	0.00	1.27	0.00	7.10
ACUM	0.00	.64	.64	17.20	52.87	75.80	86.62	93.63	98.73	98.73	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 DISTILLATN 50% RECOVERED, DEG F MEAN 302. SIGMA 27.7 REPORT 251. SAMPLES 244

		GTR 220.	GTR 235.	GTR 250.	GTR 265.	GTR 280.	GTR 295.	GTR 310.	GTR 325.	GTR 340.	GTR 355.	GTR 370.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	220.	235.	250.	265.	280.	295.	310.	325.	340.	355.	370.		
FREQ	0	4	9	15	22	36	58	62	24	9	5	0	7
PCNT	0.00	1.64	3.69	6.15	9.02	14.75	23.77	25.41	9.84	3.69	2.05	0.00	2.79
ACUM	0.00	1.64	5.33	11.48	20.49	35.25	59.02	84.43	94.26	97.95	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 DISTILLATN 50% RECOVERED, DEG F MEAN 283. SIGMA 26.0 REPORT 60. SAMPLES 60

		GTR 220.	GTR 235.	GTR 250.	GTR 265.	GTR 280.	GTR 295.	GTR 310.	GTR 325.	GTR 340.	GTR 355.	GTR 370.	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	220.	235.	250.	265.	280.	295.	310.	325.	340.	355.	370.		
FREQ	0	1	5	16	8	8	11	8	3	0	0	0	0
PCNT	0.00	1.67	8.33	26.67	13.33	13.33	18.33	13.33	5.00	0.00	0.00	0.00	0.00
ACUM	0.00	1.67	10.00	36.67	50.00	63.33	81.67	95.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table VI. Distillation, 50% Recovered

DISTRICT 5 DISTILLATN 50% RECOVERED, DEG F MEAN 289. SIGMA 28.9 REPORT 77. SAMPLES 76

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	2	12	27	7	9	7	7	5	0	0	1
PCNT	0.00	0.00	2.63	15.79	35.53	9.21	11.84	9.21	9.21	6.58	0.00	0.00	1.30
ACUM	0.00	0.00	2.63	18.42	53.95	63.16	75.00	84.21	93.42	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 DISTILLATN 50% RECOVERED, DEG F MEAN 328. SIGMA 24.7 REPORT 2. SAMPLES 2

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	0	0	0	0	1	0	0	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	50.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	50.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DISTILLATN 50% RECOVERED, DEG F MEAN 302. SIGMA 21.2 REPORT 9. SAMPLES 9

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	0	0	0	3	5	0	0	0	1	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	33.33	55.56	0.00	0.00	0.00	11.11	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	33.33	88.89	88.89	88.89	88.89	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DISTILLATN 50% RECOVERED, DEG F MEAN 320. SIGMA 21.8 REPORT 17. SAMPLES 17

		GTR 220. LEQ 235.	GTR 235. LEQ 250.	GTR 250. LEQ 265.	GTR 265. LEQ 280.	GTR 280. LEQ 295.	GTR 295. LEQ 310.	GTR 310. LEQ 325.	GTR 325. LEQ 340.	GTR 340. LEQ 355.	GTR 355. LEQ 370.	GTR 370.	MISSING VALUES
FREQ	0	0	0	0	1	0	5	4	5	1	1	0	0
PCNT	0.00	0.00	0.00	0.00	5.88	0.00	29.41	23.53	29.41	5.88	5.88	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	5.88	5.88	35.29	58.82	88.24	94.12	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 DISTILLATN 90% RECOVERED, DEG F MEAN 428. SIGMA 12.4 REPORT 66. SAMPLES 66

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	0	0	0	0	0	3	1	20	34	8	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	4.55	1.52	30.30	51.52	12.12	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	4.55	6.06	36.36	87.88	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 DISTILLATN 90% RECOVERED, DEG F MEAN 388. SIGMA 37.5 REPORT 169. SAMPLES 159

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	8	8	12	9	27	20	22	25	23	3	2	0	10
PCNT	5.03	5.03	7.55	5.66	16.98	12.58	13.84	15.72	14.47	1.89	1.26	0.00	5.92
ACUM	5.03	10.06	17.61	23.27	40.25	52.83	66.67	82.39	96.86	98.74	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 DISTILLATN 90% RECOVERED, DEG F MEAN 408. SIGMA 28.2 REPORT 251. SAMPLES 250

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	3	4	8	8	10	31	46	71	50	19	0	0	1
PCNT	1.20	1.60	3.20	3.20	4.00	12.40	18.40	28.40	20.00	7.60	0.00	0.00	.40
ACUM	1.20	2.80	6.00	9.20	13.20	25.60	44.00	72.40	92.40	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 DISTILLATN 90% RECOVERED, DEG F MEAN 384. SIGMA 31.3 REPORT 60. SAMPLES 60

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470.	MISSING VALUES
FREQ	0	1	11	8	9	8	8	8	7	0	0	0	0
PCNT	0.00	1.67	18.33	13.33	15.00	13.33	13.33	13.33	11.67	0.00	0.00	0.00	0.00
ACUM	0.00	1.67	20.00	33.33	48.33	61.67	75.00	88.33	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table VII. Distillation, 90% Recovered

DISTRICT 5 DISTILLATN 90% RECOVERED, DEG F MEAN 394. SIGMA 40.7 REPORT 77. SAMPLES 77

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	MISSING VALUES
FREQ	0	4	13	11	5	1	8	9	15	10	1	0	0
PCNT	0.00	5.19	16.88	14.29	6.49	1.30	10.39	11.69	19.48	12.99	1.30	0.00	0.00
ACUM	0.00	5.19	22.08	36.36	42.86	44.16	54.55	66.23	85.71	98.70	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 DISTILLATN 90% RECOVERED, DEG F MEAN 413. SIGMA 2.6 REPORT 2. SAMPLES 2

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	MISSING VALUES
FREQ	0	0	0	0	0	0	0	2	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 DISTILLATN 90% RECOVERED, DEG F MEAN 408. SIGMA 8.7 REPORT 9. SAMPLES 9

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	MISSING VALUES
FREQ	0	0	0	0	0	0	5	4	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	55.56	44.44	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	55.56	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 DISTILLATN 90% RECOVERED, DEG F MEAN 418. SIGMA 19.6 REPORT 17. SAMPLES 17

		GTR 320. LEQ 320.	GTR 335. LEQ 335.	GTR 350. LEQ 350.	GTR 365. LEQ 365.	GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	MISSING VALUES
FREQ	0	0	0	0	1	3	1	4	7	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	5.88	17.65	5.88	23.53	41.18	5.88	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	5.88	23.53	29.41	52.94	94.12	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 DISTILLATN END POINT, DEG F MEAN 474. SIGMA 12.1 REPORT 66. SAMPLES 66

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	0	0	0	0	1	2	19	33	10	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	1.52	3.03	28.79	50.00	15.15	1.52	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	1.52	4.55	33.33	83.33	98.48	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 DISTILLATN END POINT, DEG F MEAN 450. SIGMA 38.0 REPORT 169. SAMPLES 168

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	6	9	19	14	9	24	24	35	22	6	0	0	1
PCNT	3.57	5.36	11.31	8.33	5.36	14.29	14.29	20.83	13.10	3.57	0.00	0.00	.59
ACUM	3.57	8.93	20.24	28.57	33.93	48.21	62.50	83.33	96.43	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 DISTILLATN END POINT, DEG F MEAN 463. SIGMA 27.8 REPORT 251. SAMPLES 250

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	3	5	10	4	15	39	66	54	44	10	0	0	1
PCNT	1.20	2.00	4.00	1.60	6.00	15.60	26.40	21.60	17.60	4.00	0.00	0.00	.40
ACUM	1.20	3.20	7.20	8.80	14.80	30.40	56.80	78.40	96.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 DISTILLATN END POINT, DEG F MEAN 451. SIGMA 33.8 REPORT 60. SAMPLES 60

		GTR 380. LEQ 380.	GTR 395. LEQ 395.	GTR 410. LEQ 410.	GTR 425. LEQ 425.	GTR 440. LEQ 440.	GTR 455. LEQ 455.	GTR 470. LEQ 470.	GTR 485. LEQ 485.	GTR 500. LEQ 500.	GTR 515. LEQ 515.	GTR 530. LEQ 530.	MISSING VALUES
FREQ	1	1	6	13	3	6	8	9	11	2	0	0	0
PCNT	1.67	1.67	10.00	21.67	5.00	10.00	13.33	15.00	18.33	3.33	0.00	0.00	0.00
ACUM	1.67	3.33	13.33	35.00	40.00	50.00	63.33	78.33	96.67	100.00	100.00	100.00	PRCNT OF REPORTS

Table VIII. Distillation, End Point

DISTRICT 5 DISTILLATN END POINT, DEG F MEAN 459. SIGMA 36.7 REPORT 77. SAMPLES 76

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	1	2	6	8	9	6	9	8	19	8	0	0	1
PCNT	1.32	2.63	7.89	10.53	11.84	7.89	11.84	10.53	25.00	10.53	0.00	0.00	1.30
ACUM	1.32	3.95	11.84	22.37	34.21	42.11	53.95	64.47	89.47	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 DISTILLATN END POINT, DEG F MEAN 447. SIGMA 4.2 REPORT 2. SAMPLES 2

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	0	0	0	0	0	2	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 DISTILLATN END POINT, DEG F MEAN 465. SIGMA 8.6 REPORT 9. SAMPLES 8

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	0	0	0	0	0	1	5	2	0	0	0	0	1
PCNT	0.00	0.00	0.00	0.00	0.00	12.50	62.50	25.00	0.00	0.00	0.00	0.00	11.11
ACUM	0.00	0.00	0.00	0.00	0.00	12.50	75.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DISTILLATN END POINT, DEG F MEAN 471. SIGMA 16.1 REPORT 17. SAMPLES 17

		GTR 380.	GTR 395.	GTR 410.	GTR 425.	GTR 440.	GTR 455.	GTR 470.	GTR 485.	GTR 500.	GTR 515.	GTR 530.	MISSING VALUES
	LEQ 380.	LEQ 395.	LEQ 410.	LEQ 425.	LEQ 440.	LEQ 455.	LEQ 470.	LEQ 485.	LEQ 500.	LEQ 515.	LEQ 530.		
FREQ	0	0	0	0	0	2	9	0	6	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	11.76	52.94	0.00	35.29	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	11.76	64.71	64.71	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 GRAVITY, DEG API — MEAN 54.9 SIGMA 1.53 REPORT 66. SAMPLES 62

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	2	2	0	0	8	13	30	7	0	4
PCNT	0.00	0.00	0.00	3.23	3.23	0.00	0.00	12.90	20.97	48.39	11.29	0.00	6.06
ACUM	0.00	0.00	0.00	3.23	6.45	6.45	6.45	19.35	40.32	88.71	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 GRAVITY, DEG API — MEAN 54.5 SIGMA 1.74 REPORT 169. SAMPLES 156

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	8	13	9	27	30	33	36	0	13
PCNT	0.00	0.00	0.00	0.00	5.13	8.33	5.77	17.31	19.23	21.15	23.08	0.00	7.69
ACUM	0.00	0.00	0.00	0.00	5.13	13.46	19.23	36.54	55.77	76.92	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 GRAVITY, DEG API — MEAN 53.5 SIGMA 1.51 REPORT 251. SAMPLES 251

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	2	6	27	75	54	34	43	10	0	0
PCNT	0.00	0.00	0.00	.80	2.39	10.76	29.88	21.51	13.55	17.13	3.98	0.00	0.00
ACUM	0.00	0.00	0.00	.80	3.19	13.94	43.82	65.34	78.88	96.02	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 GRAVITY, DEG API — MEAN 54.5 SIGMA 1.56 REPORT 60. SAMPLES 59

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	1	1	10	13	11	9	14	0	1
PCNT	0.00	0.00	0.00	0.00	1.69	1.69	16.95	22.03	18.64	15.25	23.73	0.00	1.67
ACUM	0.00	0.00	0.00	0.00	1.69	3.39	20.34	42.37	61.02	76.27	100.00	100.00	PRCNT OF REPORTS

Table IX. Gravity, DEG API

DISTRICT 5 GRAVITY, DEG API — MEAN 52.4 SIGMA 2.49 REPORT 77. SAMPLES 72

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	2	4	5	2	5	8	5	20	16	3	2	0	5
PCNT	2.78	5.56	6.94	2.78	6.94	11.11	6.94	27.78	22.22	4.17	2.78	0.00	6.49
ACUM	2.78	8.33	15.28	18.06	25.00	36.11	43.06	70.83	93.06	97.22	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 GRAVITY, DEG API — MEAN 54.5 SIGMA 1.91 REPORT 2. SAMPLES 2

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	0	0	0	1	0	1	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 GRAVITY, DEG API — MEAN 55.9 SIGMA .86 REPORT 9. SAMPLES 9

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	0	0	0	1	0	0	8	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11	0.00	0.00	88.89	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11	11.11	11.11	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 GRAVITY, DEG API — MEAN 54.3 SIGMA 1.20 REPORT 17. SAMPLES 17

	LEQ 47.0	GTR 47.0 LEQ 48.0	GTR 48.0 LEQ 49.0	GTR 49.0 LEQ 50.0	GTR 50.0 LEQ 51.0	GTR 51.0 LEQ 52.0	GTR 52.0 LEQ 53.0	GTR 53.0 LEQ 54.0	GTR 54.0 LEQ 55.0	GTR 55.0 LEQ 56.0	GTR 56.0 LEQ 57.0	GTR 57.0	MISSING VALUES
FREQ	0	0	0	0	0	1	3	2	6	4	1	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	5.88	17.65	11.76	35.29	23.53	5.88	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	5.88	23.53	35.29	70.59	94.12	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .67 REPORT 66. SAMPLES 66

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	31	24	3	6	0	2	0	0	0	0	0	0
PCNT	0.00	46.97	36.36	4.55	9.09	0.00	3.03	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	46.97	83.33	87.88	96.97	96.97	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 EXISTENT GUM, MG/100ML MEAN .9 SIGMA .76 REPORT 169. SAMPLES 165

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	9	62	46	20	17	4	3	1	3	0	0	0	4
PCNT	5.45	37.58	27.88	12.12	10.30	2.42	1.82	.61	1.82	0.00	0.00	0.00	2.37
ACUM	5.45	43.03	70.91	83.03	93.33	95.76	97.58	98.18	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .60 REPORT 251. SAMPLES 223

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	16	110	65	16	9	3	3	0	0	0	1	0	28
PCNT	7.17	49.33	29.15	7.17	4.04	1.35	1.35	0.00	0.00	0.00	.45	0.00	11.16
ACUM	7.17	56.50	85.65	92.83	96.86	98.21	99.55	99.55	99.55	99.55	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .69 REPORT 60. SAMPLES 54

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	5	23	16	2	3	4	1	0	0	0	0	0	6
PCNT	9.26	42.59	29.63	3.70	5.56	7.41	1.85	0.00	0.00	0.00	0.00	0.00	10.00
ACUM	9.26	51.85	81.48	85.19	90.74	98.15	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table X. Existent Gum

DISTRICT 5 EXISTENT GUM, MG/100ML MEAN .7 SIGMA .34 REPORT 77. SAMPLES 77

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	17	47	10	1	0	0	0	0	0	0	0	0
PCNT	2.60	22.08	61.04	12.99	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	2.60	24.68	85.71	98.70	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 EXISTENT GUM, MG/100ML MEAN 1.1 SIGMA .14 REPORT 2. SAMPLES 2

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	0	1	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 EXISTENT GUM, MG/100ML MEAN .9 SIGMA .32 REPORT 9. SAMPLES 9

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	1	7	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	11.11	77.78	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	11.11	88.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 EXISTENT GUM, MG/100ML MEAN 1.3 SIGMA .46 REPORT 17. SAMPLES 13

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	0	3	7	2	0	1	0	0	0	0	0	4
PCNT	0.00	0.00	23.08	53.85	15.38	0.00	7.69	0.00	0.00	0.00	0.00	0.00	23.53
ACUM	0.00	0.00	23.08	76.92	92.31	92.31	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 TOTAL SULFUR, WEIGHT PERCENT MEAN .030 SIGMA .033 REPORT 66. SAMPLES 66

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	62	1	2	0	1	0	0	0	0	0	0	0
PCNT	0.00	93.94	1.52	3.03	0.00	1.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	93.94	95.45	98.48	98.48	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 TOTAL SULFUR, WEIGHT PERCENT MEAN .040 SIGMA .037 REPORT 169. SAMPLES 162

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	1	129	18	11	3	0	0	0	0	0	0	0	7
PCNT	.62	79.63	11.11	6.79	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14
ACUM	.62	80.25	91.36	98.15	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 TOTAL SULFUR, WEIGHT PERCENT MEAN .048 SIGMA .045 REPORT 251. SAMPLES 227

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	153	49	16	6	0	1	0	0	0	0	0	24
PCNT	0.00	67.40	21.59	7.05	2.64	0.00	.44	0.00	0.00	0.00	0.00	0.00	9.56
ACUM	0.00	67.40	88.99	96.92	99.56	99.56	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 TOTAL SULFUR, WEIGHT PERCENT MEAN .028 SIGMA .020 REPORT 60. SAMPLES 56

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	51	5	0	0	0	0	0	0	0	0	0	4
PCNT	0.00	91.07	8.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.67
ACUM	0.00	91.07	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XI. Total Sulfur

DISTRICT 5 TOTAL SULFUR, WEIGHT PERCENT MEAN .049 SIGMA .060 REPORT 77. SAMPLES 61

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	49	5	0	5	1	1	0	0	0	0	0	16
PCNT	0.00	80.33	8.20	0.00	8.20	1.64	1.64	0.00	0.00	0.00	0.00	0.00	20.78
ACUM	0.00	80.33	88.52	88.52	96.72	98.36	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 TOTAL SULFUR, WEIGHT PERCENT MEAN .045 SIGMA .007 REPORT 2. SAMPLES 2

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	2	0	0	0	0	0	0	0	0	0	0	0
PCNT	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 TOTAL SULFUR, WEIGHT PERCENT MEAN .078 SIGMA .030 REPORT 9. SAMPLES 8

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	1	7	0	0	0	0	0	0	0	0	0	1
PCNT	0.00	12.50	87.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11
ACUM	0.00	12.50	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 TOTAL SULFUR, WEIGHT PERCENT MEAN .034 SIGMA .023 REPORT 17. SAMPLES 15

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	0	14	1	0	0	0	0	0	0	0	0	0	2
PCNT	0.00	93.33	6.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.76
ACUM	0.00	93.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0003 SIGMA .00023 REPORT 66. SAMPLES 38

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	13	13	3	1	2	3	1	0	1	1	0	26
PCNT	0.00	34.21	34.21	7.89	2.63	5.26	7.89	2.63	0.00	2.63	2.63	0.00	42.42
ACUM	0.00	34.21	68.42	76.32	78.95	84.21	92.11	94.74	94.74	97.37	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0006 SIGMA .00026 REPORT 169. SAMPLES 79

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	5	6	7	7	15	13	4	8	5	9	0	90
PCNT	0.00	6.33	7.59	8.86	8.86	18.99	16.46	5.06	10.13	6.33	11.39	0.00	53.25
ACUM	0.00	6.33	13.92	22.78	31.65	50.63	67.09	72.15	82.28	88.61	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0004 SIGMA .00022 REPORT 251. SAMPLES 90

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	20	9	14	17	11	5	7	5	2	0	0	161
PCNT	0.00	22.22	10.00	15.56	18.89	12.22	5.56	7.78	5.56	2.22	0.00	0.00	64.14
ACUM	0.00	22.22	32.22	47.78	66.67	78.89	84.44	92.22	97.78	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0004 SIGMA .00022 REPORT 60. SAMPLES 13

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	1	3	4	3	1	0	0	0	0	1	0	47
PCNT	0.00	7.69	23.08	30.77	23.08	7.69	0.00	0.00	0.00	0.00	7.69	0.00	78.33
ACUM	0.00	7.69	30.77	61.54	84.62	92.31	92.31	92.31	92.31	92.31	100.00	100.00	PCNT OF REPORTS

Table XII. Mercaptan Sulfur

DISTRICT 5 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0006 SIGMA .00035 REPORT 77. SAMPLES 54

		GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	2	6	16	3	2	2	0	0	0	21	0	23
PCNT	0.00	3.70	11.11	33.33	5.56	3.70	3.70	0.00	0.00	0.00	38.89	0.00	29.87
ACUM	0.00	3.70	14.81	48.15	53.70	57.41	61.11	61.11	61.11	61.11	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0010 SIGMA 0.00000 REPORT 2. SAMPLES 1

		GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	0	0	0	0	0	0	0	0	0	1	0	1
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	50.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0002 SIGMA .00007 REPORT 9. SAMPLES 2

		GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	1	1	0	0	0	0	0	0	0	0	0	7
PCNT	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.78
ACUM	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0001 SIGMA .00004 REPORT 17. SAMPLES 10

		GTR 0.0000 LEQ 0.0000	GTR .0001 LEQ .0001	GTR .0002 LEQ .0002	GTR .0003 LEQ .0003	GTR .0004 LEQ .0004	GTR .0005 LEQ .0005	GTR .0006 LEQ .0006	GTR .0007 LEQ .0007	GTR .0008 LEQ .0008	GTR .0009 LEQ .0009	GTR .0010 LEQ .0010	MISSING VALUES
FREQ	0	8	2	0	0	0	0	0	0	0	0	0	7
PCNT	0.00	80.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.18
ACUM	0.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .22 REPORT 66. SAMPLES 66

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	1	4	6	7	5	17	9	6	10	1	0	0
PCNT	0.00	1.52	6.06	9.09	10.61	7.58	25.76	13.64	9.09	15.15	1.52	0.00	0.00
ACUM	0.00	1.52	7.58	16.67	27.27	34.85	60.61	74.24	83.33	98.48	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .25 REPORT 169. SAMPLES 165

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	1	6	14	15	25	14	25	28	15	13	9	0	4
PCNT	.61	3.64	8.48	9.09	15.15	8.48	15.15	16.97	9.09	7.88	5.45	0.00	2.37
ACUM	.61	4.24	12.73	21.82	36.97	45.45	60.61	77.58	86.67	94.55	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 251. SAMPLES 245

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	2	10	13	11	19	28	38	48	34	29	13	0	6
PCNT	.82	4.08	5.31	4.49	7.76	11.43	15.51	19.59	13.88	11.84	5.31	0.00	2.39
ACUM	.82	4.90	10.20	14.69	22.45	33.88	49.39	68.98	82.86	94.69	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 60. SAMPLES 52

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	2	4	3	8	6	8	7	8	3	3	0	8
PCNT	0.00	3.85	7.69	5.77	15.38	11.54	15.38	13.46	15.38	5.77	5.77	0.00	13.33
ACUM	0.00	3.85	11.54	17.31	32.69	44.23	59.62	73.08	88.46	94.23	100.00	100.00	PCNT OF REPORTS

Table XIII. Reid Vapor Pressure

DISTRICT 5 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 77. SAMPLES 76

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	1	4	2	7	9	11	13	11	7	10	1	0	1
PCNT	1.32	5.26	2.63	9.21	11.84	14.47	17.11	14.47	9.21	13.16	1.32	0.00	1.30
ACUM	1.32	6.58	9.21	18.42	30.26	44.74	61.84	76.32	85.53	98.68	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 REID VAPOR PRESSURE,LBS MEAN 2.7 SIGMA .14 REPORT 2. SAMPLES 2

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	0	0	0	0	0	1	0	1	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .19 REPORT 9. SAMPLES 9

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	0	1	0	1	0	2	3	2	0	0	0	0
PCNT	0.00	0.00	11.11	0.00	11.11	0.00	22.22	33.33	22.22	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	11.11	11.11	22.22	22.22	44.44	77.78	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 REID VAPOR PRESSURE,LBS MEAN 2.5 SIGMA .17 REPORT 17. SAMPLES 14

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	0	0	1	2	3	2	3	2	1	0	0	0	3
PCNT	0.00	0.00	7.14	14.29	21.43	14.29	21.43	14.29	7.14	0.00	0.00	0.00	17.65
ACUM	0.00	0.00	7.14	21.43	42.86	57.14	78.57	92.86	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .1 REPORT 66. SAMPLES 66

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9	MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9		
FREQ	0	0	0	0	1	3	6	15	33	8	0	0	0
PCNT	0.00	0.00	0.00	0.00	1.52	4.55	9.09	22.73	50.00	12.12	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	1.52	6.06	15.15	37.88	87.88	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .1 REPORT 169. SAMPLES 162

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9	MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9		
FREQ	0	0	0	0	6	17	20	48	60	9	2	0	7
PCNT	0.00	0.00	0.00	0.00	3.70	10.49	12.35	29.63	37.04	5.56	1.23	0.00	4.14
ACUM	0.00	0.00	0.00	0.00	3.70	14.20	26.54	56.17	93.21	98.77	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.5 SIGMA .1 REPORT 251. SAMPLES 227

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9	MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9		
FREQ	0	0	0	0	8	22	66	89	28	14	0	0	24
PCNT	0.00	0.00	0.00	0.00	3.52	9.69	29.07	39.21	12.33	6.17	0.00	0.00	9.56
ACUM	0.00	0.00	0.00	0.00	3.52	13.22	42.29	81.50	93.83	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.5 SIGMA .1 REPORT 60. SAMPLES 56

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9	MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9		
FREQ	0	0	0	0	0	4	12	23	17	0	0	0	4
PCNT	0.00	0.00	0.00	0.00	0.00	7.14	21.43	41.07	30.36	0.00	0.00	0.00	6.67
ACUM	0.00	0.00	0.00	0.00	0.00	7.14	28.57	69.64	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XIV. Heat of Combustion

DISTRICT 5 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.4 SIGMA .1 REPORT 77. SAMPLES 61

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9		MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9			
FREQ	0	0	7	6	13	15	12	8	4	0	0	0		16
PCNT	0.00	0.00	0.00	9.84	21.31	24.51	19.67	13.11	6.56	0.00	0.00	0.00		20.78
ACUM	0.00	0.00	0.00	9.84	31.15	60.66	80.33	93.44	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

DISTRICT 6 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .1 REPORT 2. SAMPLES 2

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9		MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9			
FREQ	0	0	0	0	0	0	0	0	2	0	0	0		0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00		0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

DISTRICT 7 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .0 REPORT 9. SAMPLES 8

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9		MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9			
FREQ	0	0	0	0	0	0	0	0	3	0	0	0		1
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00		11.11
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

DISTRICT 8 HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.6 SIGMA .0 REPORT 17. SAMPLES 15

		GTR 42.9	GTR 43.0	GTR 43.1	GTR 43.2	GTR 43.3	GTR 43.4	GTR 43.5	GTR 43.6	GTR 43.7	GTR 43.8	GTR 43.9		MISSING VALUES
	LEQ 42.9	LEQ 43.0	LEQ 43.1	LEQ 43.2	LEQ 43.3	LEQ 43.4	LEQ 43.5	LEQ 43.6	LEQ 43.7	LEQ 43.8	LEQ 43.9			
FREQ	0	0	0	0	0	0	0	11	4	0	0	0		2
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.33	26.67	0.00	0.00	0.00		11.76
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.33	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

DISTRICT 1 AROMATIC CONTENT, VOLUME PERCENT MEAN 11.9 SIGMA 2.43 REPORT 66. SAMPLES 66

		GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 22.5	GTR 25.0 LEQ 25.0	MISSING VALUES
FREQ	0	0	0	1	12	27	19	6	1	0	0	0	0
PCNT	0.00	0.00	0.00	1.52	18.18	40.91	28.79	9.09	1.52	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	1.52	19.70	60.61	89.39	98.48	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 AROMATIC CONTENT, VOLUME PERCENT MEAN 10.3 SIGMA 4.15 REPORT 169. SAMPLES 167

		GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 22.5	GTR 25.0 LEQ 25.0	MISSING VALUES
FREQ	0	0	4	35	60	27	16	12	6	8	0	0	2
PCNT	0.00	0.00	2.40	20.96	35.93	16.17	8.98	7.19	3.59	4.79	0.00	0.00	1.18
ACUM	0.00	0.00	2.40	23.35	59.28	75.45	84.43	91.62	95.21	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 AROMATIC CONTENT, VOLUME PERCENT MEAN 11.8 SIGMA 2.74 REPORT 251. SAMPLES 230

		GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 22.5	GTR 25.0 LEQ 25.0	MISSING VALUES
FREQ	0	0	1	0	78	74	43	28	6	1	0	0	21
PCNT	0.00	0.00	0.43	0.00	33.91	32.17	18.70	12.17	2.61	.43	0.00	0.00	8.37
ACUM	0.00	0.00	0.43	0.00	34.35	66.09	84.78	96.96	99.57	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 AROMATIC CONTENT, VOLUME PERCENT MEAN 10.5 SIGMA 3.40 REPORT 60. SAMPLES 60

		GTR 0.0 LEQ 0.0	GTR 2.5 LEQ 2.5	GTR 5.0 LEQ 5.0	GTR 7.5 LEQ 7.5	GTR 10.0 LEQ 10.0	GTR 12.5 LEQ 12.5	GTR 15.0 LEQ 15.0	GTR 17.5 LEQ 17.5	GTR 20.0 LEQ 20.0	GTR 22.5 LEQ 22.5	GTR 25.0 LEQ 25.0	MISSING VALUES
FREQ	0	0	0	8	26	11	5	10	0	0	0	0	0
PCNT	0.00	0.00	0.00	13.33	43.33	18.33	8.33	16.67	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	13.33	56.67	75.00	83.33	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XV. Aromatic Content

DISTRICT 5 AROMATIC CONTENT, VOLUME PERCENT MEAN 12.7 SIGMA 2.28 REPORT 77. SAMPLES 63

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	0	11	19	25	8	3	0	0	0	14
PCNT	0.00	0.00	0.00	0.00	17.46	30.16	39.68	12.70	0.00	0.00	0.00	0.00	18.18
ACUM	0.00	0.00	0.00	0.00	17.46	47.62	87.30	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 AROMATIC CONTENT, VOLUME PERCENT MEAN 14.4 SIGMA .78 REPORT 2. SAMPLES 2

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	0	0	0	2	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 AROMATIC CONTENT, VOLUME PERCENT MEAN 10.5 SIGMA 2.13 REPORT 9. SAMPLES 9

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	1	0	0	8	0	0	0	0	0	0	0
PCNT	0.00	0.00	11.11	0.00	0.00	88.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	11.11	11.11	11.11	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 AROMATIC CONTENT, VOLUME PERCENT MEAN 12.3 SIGMA 1.37 REPORT 17. SAMPLES 17

	LEQ 0.0	GTR 0.0 LEQ 2.5	GTR 2.5 LEQ 5.0	GTR 5.0 LEQ 7.5	GTR 7.5 LEQ 10.0	GTR 10.0 LEQ 12.5	GTR 12.5 LEQ 15.0	GTR 15.0 LEQ 17.5	GTR 17.5 LEQ 20.0	GTR 20.0 LEQ 22.5	GTR 22.5 LEQ 25.0	GTR 25.0	MISSING VALUES
FREQ	0	0	0	0	2	7	8	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	11.76	41.18	47.06	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	11.76	52.94	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 OLEFIN CONTENT, VOLUME PERCENT MEAN .9 SIGMA .31 REPORT 66. SAMPLES 66

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	9	44	11	2	0	0	0	0	0	0	0	0
PCNT	0.00	13.64	66.67	16.67	3.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	13.64	80.30	96.97	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 OLEFIN CONTENT, VOLUME PERCENT MEAN .9 SIGMA .46 REPORT 169. SAMPLES 166

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	44	73	32	10	4	0	1	0	0	0	0	3
PCNT	1.20	26.51	43.98	19.28	6.02	2.41	0.00	.60	0.00	0.00	0.00	0.00	1.78
ACUM	1.20	27.71	71.69	90.96	96.99	99.40	99.40	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 OLEFIN CONTENT, VOLUME PERCENT MEAN .8 SIGMA .44 REPORT 251. SAMPLES 228

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	63	136	15	7	2	2	1	0	0	0	0	23
PCNT	.88	27.63	59.65	6.58	3.07	.88	.88	.44	0.00	0.00	0.00	0.00	9.16
ACUM	.88	28.51	88.16	94.74	97.81	98.68	99.56	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 OLEFIN CONTENT, VOLUME PERCENT MEAN .6 SIGMA .24 REPORT 60. SAMPLES 55

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	20	32	1	0	0	0	0	0	0	0	0	5
PCNT	3.64	36.36	58.18	1.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.33
ACUM	3.64	40.00	98.18	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XVI. Olefin Content

DISTRICT 5 OLEFIN CONTENT, VOLUME PERCENT MEAN .9 SIGMA .32 REPORT 77. SAMPLES 62

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	13	40	6	3	0	0	0	0	0	0	0	15
PCNT	0.00	20.97	64.52	9.68	4.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.48
ACUM	0.00	20.97	85.48	95.16	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 OLEFIN CONTENT, VOLUME PERCENT MEAN .4 SIGMA 0.00 REPORT 2. SAMPLES 1

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	1	0	0	0	0	0	0	0	0	0	0	1
PCNT	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00
ACUM	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 OLEFIN CONTENT, VOLUME PERCENT MEAN .5 SIGMA .20 REPORT 9. SAMPLES 9

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	8	1	0	0	0	0	0	0	0	0	0	0
PCNT	0.00	88.89	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	88.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 OLEFIN CONTENT, VOLUME PERCENT MEAN .5 SIGMA .47 REPORT 17. SAMPLES 17

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	13	2	2	0	0	0	0	0	0	0	0	0
PCNT	0.00	76.47	11.76	11.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	76.47	88.24	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 PERCNT HYDROGEN (CALCD) MEAN 14.45 SIGMA .19 REPORT 66. SAMPLES 62

		GTR 13.60	GTR 13.75	GTR 13.90	GTR 14.05	GTR 14.20	GTR 14.35	GTR 14.50	GTR 14.65	GTR 14.80	GTR 14.95	GTR 15.10		MISSING VALUES
	LEQ 13.60	LEQ 13.75	LEQ 13.90	LEQ 14.05	LEQ 14.20	LEQ 14.35	LEQ 14.50	LEQ 14.65	LEQ 14.80	LEQ 14.95	LEQ 15.10			
FREQ	0	0	0	4	4	9	10	32	3	0	0	0		4
PCNT	0.00	0.00	0.00	6.45	6.45	14.52	16.13	51.61	4.84	0.00	0.00	0.00		6.06
ACUM	0.00	0.00	0.00	6.45	12.90	27.42	43.55	95.16	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

DISTRICT 2 PERCNT HYDROGEN (CALCD) MEAN 14.44 SIGMA .27 REPORT 169. SAMPLES 142

		GTR 13.60	GTR 13.75	GTR 13.90	GTR 14.05	GTR 14.20	GTR 14.35	GTR 14.50	GTR 14.65	GTR 14.80	GTR 14.95	GTR 15.10		MISSING VALUES
	LEQ 13.60	LEQ 13.75	LEQ 13.90	LEQ 14.05	LEQ 14.20	LEQ 14.35	LEQ 14.50	LEQ 14.65	LEQ 14.80	LEQ 14.95	LEQ 15.10			
FREQ	0	3	5	11	15	8	13	58	29	0	0	0		27
PCNT	0.00	2.11	3.52	7.75	10.56	5.63	9.15	40.85	20.42	0.00	0.00	0.00		15.96
ACUM	0.00	2.11	5.63	13.38	23.94	29.58	38.73	79.58	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

DISTRICT 3 PERCNT HYDROGEN (CALCD) MEAN 14.32 SIGMA .17 REPORT 251. SAMPLES 223

		GTR 13.60	GTR 13.75	GTR 13.90	GTR 14.05	GTR 14.20	GTR 14.35	GTR 14.50	GTR 14.65	GTR 14.80	GTR 14.95	GTR 15.10		MISSING VALUES
	LEQ 13.60	LEQ 13.75	LEQ 13.90	LEQ 14.05	LEQ 14.20	LEQ 14.35	LEQ 14.50	LEQ 14.65	LEQ 14.80	LEQ 14.95	LEQ 15.10			
FREQ	0	0	5	14	28	64	90	15	7	0	0	0		28
PCNT	0.00	0.00	2.24	6.28	12.56	28.70	40.36	6.73	3.14	0.00	0.00	0.00		11.16
ACUM	0.00	0.00	2.24	8.52	21.08	49.78	90.13	96.86	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

DISTRICT 4 PERCNT HYDROGEN (CALCD) MEAN 14.40 SIGMA .22 REPORT 60. SAMPLES 59

		GTR 13.60	GTR 13.75	GTR 13.90	GTR 14.05	GTR 14.20	GTR 14.35	GTR 14.50	GTR 14.65	GTR 14.80	GTR 14.95	GTR 15.10		MISSING VALUES
	LEQ 13.60	LEQ 13.75	LEQ 13.90	LEQ 14.05	LEQ 14.20	LEQ 14.35	LEQ 14.50	LEQ 14.65	LEQ 14.80	LEQ 14.95	LEQ 15.10			
FREQ	0	0	0	3	10	10	9	23	4	0	0	0		1
PCNT	0.00	0.00	0.00	5.08	16.95	16.95	15.25	38.98	6.78	0.00	0.00	0.00		1.67
ACUM	0.00	0.00	0.00	5.08	22.03	38.98	54.24	93.22	100.00	100.00	100.00	100.00	PRCNT OF REPORTS	

Table XVII. Percent Hydrogen

DISTRICT 5 PERCNT HYDROGEN (CALCD) MEAN 14.10 SIGMA .22 REPORT 77. SAMPLES 59

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	11	5	12	18	10	3	0	0	0	0	16
PCNT	0.00	0.00	18.64	8.47	20.34	30.51	16.95	5.08	0.00	0.00	0.00	0.00	23.38
ACUM	0.00	0.00	18.64	27.12	47.46	77.97	94.92	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 PERCNT HYDROGEN (CALCD) MEAN 14.34 SIGMA .13 REPORT 2. SAMPLES 2

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	0	0	1	1	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 PERCNT HYDROGEN (CALCD) MEAN 14.56 SIGMA .05 REPORT 9. SAMPLES 9

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	0	0	0	0	8	1	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.89	11.11	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	88.89	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 PERCNT HYDROGEN (CALCD) MEAN 14.40 SIGMA .07 REPORT 17. SAMPLES 16

	LEQ 13.60	GTR 13.60 LEQ 13.75	GTR 13.75 LEQ 13.90	GTR 13.90 LEQ 14.05	GTR 14.05 LEQ 14.20	GTR 14.20 LEQ 14.35	GTR 14.35 LEQ 14.50	GTR 14.50 LEQ 14.65	GTR 14.65 LEQ 14.80	GTR 14.80 LEQ 14.95	GTR 14.95 LEQ 15.10	GTR 15.10	MISSING VALUES
FREQ	0	0	0	0	0	3	13	0	0	0	0	0	1
PCNT	0.00	0.00	0.00	0.00	0.00	18.75	81.25	0.00	0.00	0.00	0.00	0.00	5.88
ACUM	0.00	0.00	0.00	0.00	0.00	18.75	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 SMOKE POINT — MEAN 27.4 SIGMA 3.23 REPORT 66. SAMPLES 66

		GTR 18.0 LEQ 18.0	GTR 20.0 LEQ 20.0	GTR 22.0 LEQ 22.0	GTR 24.0 LEQ 24.0	GTR 26.0 LEQ 26.0	GTR 28.0 LEQ 28.0	GTR 30.0 LEQ 30.0	GTR 32.0 LEQ 32.0	GTR 34.0 LEQ 34.0	GTR 36.0 LEQ 36.0	GTR 38.0	MISSING VALUES
FREQ	0	1	1	17	7	7	22	10	1	0	0	0	0
PCNT	0.00	1.52	1.52	25.76	10.61	10.61	33.33	15.15	1.52	0.00	0.00	0.00	0.00
ACUM	0.00	1.52	3.03	28.79	39.39	50.00	83.33	98.48	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 2 SMOKE POINT — MEAN 28.3 SIGMA 3.16 REPORT 169. SAMPLES 165

		GTR 18.0 LEQ 18.0	GTR 20.0 LEQ 20.0	GTR 22.0 LEQ 22.0	GTR 24.0 LEQ 24.0	GTR 26.0 LEQ 26.0	GTR 28.0 LEQ 28.0	GTR 30.0 LEQ 30.0	GTR 32.0 LEQ 32.0	GTR 34.0 LEQ 34.0	GTR 36.0 LEQ 36.0	GTR 38.0	MISSING VALUES
FREQ	0	0	8	19	21	22	39	49	4	3	0	0	4
PCNT	0.00	0.00	4.85	11.52	12.73	13.33	23.64	29.70	2.42	1.82	0.00	0.00	2.37
ACUM	0.00	0.00	4.85	16.36	29.09	42.42	66.06	95.76	98.18	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 SMOKE POINT — MEAN 27.9 SIGMA 3.21 REPORT 251. SAMPLES 195

		GTR 18.0 LEQ 18.0	GTR 20.0 LEQ 20.0	GTR 22.0 LEQ 22.0	GTR 24.0 LEQ 24.0	GTR 26.0 LEQ 26.0	GTR 28.0 LEQ 28.0	GTR 30.0 LEQ 30.0	GTR 32.0 LEQ 32.0	GTR 34.0 LEQ 34.0	GTR 36.0 LEQ 36.0	GTR 38.0	MISSING VALUES
FREQ	0	0	3	19	44	69	13	25	13	9	0	0	56
PCNT	0.00	0.00	1.54	9.74	22.56	35.38	6.67	12.82	6.67	4.62	0.00	0.00	22.31
ACUM	0.00	0.00	1.54	11.28	33.85	69.23	75.90	88.72	95.38	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 SMOKE POINT — MEAN 28.1 SIGMA 3.23 REPORT 60. SAMPLES 58

		GTR 18.0 LEQ 18.0	GTR 20.0 LEQ 20.0	GTR 22.0 LEQ 22.0	GTR 24.0 LEQ 24.0	GTR 26.0 LEQ 26.0	GTR 28.0 LEQ 28.0	GTR 30.0 LEQ 30.0	GTR 32.0 LEQ 32.0	GTR 34.0 LEQ 34.0	GTR 36.0 LEQ 36.0	GTR 38.0	MISSING VALUES
FREQ	0	0	0	3	16	13	11	9	1	2	3	0	2
PCNT	0.00	0.00	0.00	5.17	27.59	22.41	18.97	15.52	1.72	3.45	5.17	0.00	3.33
ACUM	0.00	0.00	0.00	5.17	32.76	55.17	74.14	89.66	91.38	94.83	100.00	100.00	PCNT OF REPORTS

Table XVIII. Smoke Point

DISTRICT 5 SMOKE POINT — MEAN 24.7 SIGMA 3.04 REPORT 77. SAMPLES 62

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	1	12	17	17	9	5	0	0	0	1	0	15
PCNT	0.00	1.61	19.35	27.42	27.42	14.52	8.06	0.00	0.00	0.00	1.61	0.00	19.48
ACUM	0.00	1.61	20.97	48.39	75.81	90.32	98.39	98.39	98.39	98.39	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 SMOKE POINT — MEAN 25.5 SIGMA .71 REPORT 2. SAMPLES 2

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	0	0	0	2	0	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 SMOKE POINT — MEAN 27.8 SIGMA .50 REPORT 9. SAMPLES 4

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	0	0	0	0	4	0	0	0	0	0	0	5
PCNT	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	55.56
ACUM	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 SMOKE POINT — MEAN 25.8 SIGMA .44 REPORT 17. SAMPLES 17

		GTR 18.0	GTR 20.0	GTR 22.0	GTR 24.0	GTR 26.0	GTR 28.0	GTR 30.0	GTR 32.0	GTR 34.0	GTR 36.0	GTR 38.0	MISSING VALUES
	LEQ 18.0	LEQ 20.0	LEQ 22.0	LEQ 24.0	LEQ 26.0	LEQ 28.0	LEQ 30.0	LEQ 32.0	LEQ 34.0	LEQ 36.0	LEQ 38.0		
FREQ	0	0	0	0	17	0	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 WATER SEPARATION INDEX MODIFIED MEAN 94. SIGMA 6.0 REPORT 66. SAMPLES 66

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	0	2	1	2	1	2	6	12	15	25	0	0
PCNT	0.00	0.00	3.03	1.52	3.03	1.52	3.03	9.09	18.18	22.73	37.86	0.00	0.00
ACUM	0.00	0.00	3.03	4.55	7.58	9.09	12.12	21.21	39.39	62.12	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 WATER SEPARATION INDEX MODIFIED MEAN 89. SIGMA 7.6 REPORT 169. SAMPLES 167

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	3	11	9	16	16	17	17	28	35	15	0	2
PCNT	0.00	1.80	6.59	5.39	9.58	9.58	10.18	10.18	16.77	20.96	8.98	0.00	1.18
ACUM	0.00	1.80	8.38	13.77	23.35	32.93	43.11	53.29	70.06	91.02	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 WATER SEPARATION INDEX MODIFIED MEAN 89. SIGMA 6.9 REPORT 251. SAMPLES 246

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	4	7	22	22	17	33	38	47	31	25	0	5
PCNT	0.00	1.63	2.85	8.94	8.94	6.91	13.41	15.45	19.11	12.60	10.16	0.00	1.99
ACUM	0.00	1.63	4.47	13.41	22.36	29.27	42.68	58.13	77.24	89.84	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 WATER SEPARATION INDEX MODIFIED MEAN 88. SIGMA 7.6 REPORT 60. SAMPLES 60

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	1	4	2	8	3	16	4	5	7	10	0	0
PCNT	0.00	1.67	6.67	3.33	13.33	5.00	26.67	6.67	8.33	11.67	16.67	0.00	0.00
ACUM	0.00	1.67	8.33	11.67	25.00	30.00	56.67	63.33	71.67	83.33	100.00	100.00	PRCNT OF REPORTS

Table XIX. Water Separation Index, Modified

DISTRICT 5 WATER SEPARATION INDEX MODIFIED MEAN 92. SIGMA 5.6 REPORT 77. SAMPLES 75

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	0	1	1	5	2	10	12	18	16	10	0	2
PCNT	0.00	0.00	1.33	1.33	6.67	2.67	13.33	16.00	24.00	21.33	13.33	0.00	2.60
ACUM	0.00	0.00	1.33	2.67	9.33	12.00	25.33	41.33	65.33	86.67	100.00	100.00	PRCNT OF REPORTS

DISTRICT 6 WATER SEPARATION INDEX MODIFIED MEAN 86. SIGMA 1.4 REPORT 2. SAMPLES 2

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	0	0	0	0	1	1	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 7 WATER SEPARATION INDEX MODIFIED MEAN 87. SIGMA 4.9 REPORT 9. SAMPLES 9

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	0	0	0	1	4	1	2	0	0	1	0	0
PCNT	0.00	0.00	0.00	0.00	11.11	44.44	11.11	22.22	0.00	0.00	11.11	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	11.11	55.56	66.67	88.89	88.89	88.89	100.00	100.00	PRCNT OF REPORTS

DISTRICT 8 WATER SEPARATION INDEX MODIFIED MEAN 87. SIGMA 9.9 REPORT 17. SAMPLES 17

	LEQ 70.	GTR 70. LEQ 73.	GTR 73. LEQ 76.	GTR 76. LEQ 79.	GTR 79. LEQ 82.	GTR 82. LEQ 85.	GTR 85. LEQ 88.	GTR 88. LEQ 91.	GTR 91. LEQ 94.	GTR 94. LEQ 97.	GTR 97. LEQ 100.	GTR 100.	MISSING VALUES
FREQ	0	1	2	3	0	2	0	1	3	3	2	0	0
PCNT	0.00	5.88	11.76	17.65	0.00	11.76	0.00	5.88	17.65	17.65	11.76	0.00	0.00
ACUM	0.00	5.88	17.65	35.29	35.29	47.06	47.06	52.94	70.59	88.24	100.00	100.00	PRCNT OF REPORTS

DISTRICT 1 PARTICULATE CONTAMINATE, MG/LITER MEAN .46 SIGMA .26 REPORT 66. SAMPLES 66

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	5	11	7	10	6	9	3	9	5	1	0	0
PCNT	0.00	7.58	16.67	10.61	15.15	9.09	13.64	4.55	13.64	7.58	1.52	0.00	0.00
ACUM	0.00	7.58	24.24	34.85	50.00	59.09	72.73	77.27	90.91	98.48	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 PARTICULATE CONTAMINATE, MG/LITER MEAN .44 SIGMA .24 REPORT 169. SAMPLES 163

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	20	24	22	28	17	21	10	7	9	5	0	6
PCNT	0.00	12.27	14.72	13.50	17.18	10.43	12.88	6.13	4.29	5.52	3.07	0.00	3.55
ACUM	0.00	12.27	26.99	40.49	57.67	68.10	80.98	87.12	91.41	96.93	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 PARTICULATE CONTAMINATE, MG/LITER MEAN .30 SIGMA .22 REPORT 251. SAMPLES 235

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	9	60	50	36	34	12	9	5	14	6	0	0	16
PCNT	3.83	25.53	21.28	15.32	14.47	5.11	3.83	2.13	5.96	2.55	0.00	0.00	6.37
ACUM	3.83	29.36	50.64	65.96	80.43	85.53	89.36	91.49	97.45	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 PARTICULATE CONTAMINATE, MG/LITER MEAN .32 SIGMA .21 REPORT 60. SAMPLES 58

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	1	9	19	7	8	5	3	4	1	1	0	0	2
PCNT	1.72	15.52	32.76	12.07	13.79	8.62	5.17	6.90	1.72	1.72	0.00	0.00	3.33
ACUM	1.72	17.24	50.00	62.07	75.86	84.48	89.66	96.55	98.28	100.00	100.00	100.00	PRCNT OF REPORTS

Table XX. Particulate Contaminate

DISTRICT 5 PARTICULATE CONTAMINATE, MG/LITER MEAN .37 SIGMA .23 REPORT 77. SAMPLES 76

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	12	12	18	12	8	2	4	4	2	2	0	1
PCNT	0.00	15.79	15.79	23.68	15.79	10.53	2.63	5.26	5.26	2.63	2.63	0.00	1.30
ACUM	0.00	15.79	31.58	55.26	71.05	81.58	84.21	89.47	94.74	97.37	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 PARTICULATE CONTAMINATE, MG/LITER MEAN .80 SIGMA 0.00 REPORT 2. SAMPLES 2

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	0	0	0	0	0	0	0	2	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 PARTICULATE CONTAMINATE, MG/LITER MEAN .35 SIGMA .26 REPORT 9. SAMPLES 8

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	3	0	2	0	1	0	2	0	0	0	0	1
PCNT	0.00	37.50	0.00	25.00	0.00	12.50	0.00	25.00	0.00	0.00	0.00	0.00	11.11
ACUM	0.00	37.50	37.50	62.50	62.50	75.00	75.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 PARTICULATE CONTAMINATE, MG/LITER MEAN .45 SIGMA .25 REPORT 17. SAMPLES 17

	LEQ 0.00	GTR 0.00 LEQ .10	GTR .10 LEQ .20	GTR .20 LEQ .30	GTR .30 LEQ .40	GTR .40 LEQ .50	GTR .50 LEQ .60	GTR .60 LEQ .70	GTR .70 LEQ .80	GTR .80 LEQ .90	GTR .90 LEQ 1.00	GTR 1.00	MISSING VALUES
FREQ	0	0	4	1	3	1	5	1	0	1	1	0	0
PCNT	0.00	0.00	23.53	5.88	17.65	5.88	29.41	5.88	0.00	5.88	5.88	0.00	0.00
ACUM	0.00	0.00	23.53	29.41	47.06	52.94	82.35	88.24	88.24	94.12	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 ACID NUMBER, MG KOH/GRAM — MEAN .004 SIGMA .0028 REPORT 66. SAMPLES 61

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	0	32	11	3	3	3	2	1	0	0	0	0	5
PCNT	0.00	52.46	18.03	4.92	4.92	4.92	3.28	1.64	0.00	0.00	0.00	0.00	7.58
ACUM	0.00	52.46	70.49	75.41	80.33	85.25	88.52	90.16	90.16	90.16	90.16	90.16	PCNT OF REPORTS

DISTRICT 2 ACID NUMBER, MG KOH/GRAM — MEAN .006 SIGMA .0028 REPORT 169. SAMPLES 162

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	0	14	40	37	39	23	5	4	0	0	0	0	7
PCNT	0.00	8.64	24.69	22.84	24.07	14.20	3.09	2.47	0.00	0.00	0.00	0.00	4.14
ACUM	0.00	8.64	33.33	56.17	80.25	94.44	97.53	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 3 ACID NUMBER, MG KOH/GRAM — MEAN .006 SIGMA .0026 REPORT 251. SAMPLES 227

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	2	25	45	78	47	20	6	2	1	0	0	0	24
PCNT	.88	11.01	19.82	34.80	20.70	8.81	2.64	.88	.44	0.00	0.00	0.00	9.56
ACUM	.88	11.89	31.72	66.52	87.22	96.04	98.68	99.56	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 4 ACID NUMBER, MG KOH/GRAM — MEAN .006 SIGMA .0028 REPORT 60. SAMPLES 60

	LEQ 0.000	GTR 0.000 LEQ .002	GTR .002 LEQ .004	GTR .004 LEQ .006	GTR .006 LEQ .008	GTR .008 LEQ .010	GTR .010 LEQ .012	GTR .012 LEQ .014	GTR .014 LEQ .016	GTR .016 LEQ .018	GTR .018 LEQ .020	GTR .020	MISSING VALUES
FREQ	0	6	11	20	10	11	1	0	1	0	0	0	0
PCNT	0.00	10.00	18.33	33.33	16.67	18.33	1.67	0.00	1.67	0.00	0.00	0.00	0.00
ACUM	0.00	10.00	28.33	61.67	78.33	96.67	98.33	98.33	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XXI. Acid Number

DISTRICT 5 ACID NUMBER, MG KOH/GRAM — MEAN .007 SIGMA .0030 REPORT 77. SAMPLES 62

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	5	9	21	12	10	4	2	0	0	0	0	15
PCNT	0.00	8.06	14.52	33.87	19.35	16.13	6.45	3.23	0.00	0.00	0.00	0.00	19.48
ACUM	0.00	8.06	22.58	56.45	75.81	91.94	98.39	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 6 ACID NUMBER, MG KOH/GRAM — MEAN .003 SIGMA .0007 REPORT 2. SAMPLES 2

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	1	1	0	0	0	0	0	0	0	0	0	0
PCNT	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 ACID NUMBER, MG KOH/GRAM — MEAN .003 SIGMA .0011 REPORT 9. SAMPLES 9

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	7	1	1	0	0	0	0	0	0	0	0	0
PCNT	0.00	77.78	11.11	11.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	77.78	88.89	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 ACID NUMBER, MG KOH/GRAM — MEAN .005 SIGMA .0024 REPORT 17. SAMPLES 16

		GTR 0.000	GTR .002	GTR .004	GTR .006	GTR .008	GTR .010	GTR .012	GTR .014	GTR .016	GTR .018	GTR .020	MISSING VALUES
	LEQ 0.000	LEQ .002	LEQ .004	LEQ .006	LEQ .008	LEQ .010	LEQ .012	LEQ .014	LEQ .016	LEQ .018	LEQ .020		
FREQ	0	5	2	4	4	1	0	0	0	0	0	0	1
PCNT	0.00	31.25	12.50	25.00	25.00	6.25	0.00	0.00	0.00	0.00	0.00	0.00	5.88
ACUM	0.00	31.25	43.75	68.75	93.75	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 FILTRATION TIME, 1 GALLON, MIN MEAN 5.7 SIGMA 2.2 REPORT 66. SAMPLES 65

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	3	9	30	11	4	1	0	3	2	0	2	1
PCNT	0.00	4.62	13.85	46.15	16.92	6.15	1.54	0.00	4.62	3.08	0.00	3.08	1.52
ACUM	0.00	4.62	18.46	64.62	81.54	87.69	89.23	89.23	93.85	96.92	96.92	100.00	PRCNT OF REPORTS

DISTRICT 2 FILTRATION TIME, 1 GALLON, MIN MEAN 5.3 SIGMA 2.5 REPORT 169. SAMPLES 161

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	26	44	37	17	16	6	1	4	3	1	6	8
PCNT	0.00	16.15	27.33	22.98	10.56	9.94	3.73	.62	2.48	1.86	.62	3.73	4.73
ACUM	0.00	16.15	43.48	66.46	77.02	86.96	90.68	91.30	93.73	95.65	96.27	100.00	PRCNT OF REPORTS

DISTRICT 3 FILTRATION TIME, 1 GALLON, MIN MEAN 5.0 SIGMA 2.0 REPORT 251. SAMPLES 248

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	2	35	83	63	27	18	7	4	0	2	5	2	3
PCNT	.81	14.11	33.47	25.40	10.89	7.26	2.82	1.61	0.00	.81	2.02	.81	1.20
ACUM	.81	14.92	48.39	73.79	84.68	91.94	94.76	96.37	96.37	97.18	99.19	100.00	PRCNT OF REPORTS

DISTRICT 4 FILTRATION TIME, 1 GALLON, MIN MEAN 5.4 SIGMA 1.5 REPORT 60. SAMPLES 57

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	2	11	24	8	6	5	0	0	0	1	0	3
PCNT	0.00	3.51	19.30	42.11	14.04	10.53	8.77	0.00	0.00	0.00	1.75	0.00	5.00
ACUM	0.00	3.51	22.81	64.91	78.95	89.47	98.25	98.25	98.25	98.25	100.00	100.00	PRCNT OF REPORTS

Table XXII. Filtration Time

DISTRICT 5 FILTRATION TIME, 1 GALLON, MIN MEAN 4.3 SIGMA 1.6 REPORT 77. SAMPLES 72

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	2	20	18	24	5	2	0	0	0	0	0	1	5
PCNT	2.78	27.78	25.00	33.33	6.94	2.78	0.00	0.00	0.00	0.00	0.00	1.39	6.49
ACUM	2.78	30.56	55.56	88.89	95.83	98.61	98.61	98.61	98.61	98.61	98.61	100.00	PCNT OF REPORTS

DISTRICT 6 FILTRATION TIME, 1 GALLON, MIN MEAN 7.0 SIGMA 0.0 REPORT 2. SAMPLES 2

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	0	0	0	0	2	0	0	0	0	0	0	0
PCNT	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ACUM	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 FILTRATION TIME, 1 GALLON, MIN MEAN 5.2 SIGMA 2.9 REPORT 9. SAMPLES 6

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	0	5	0	0	0	0	0	0	1	0	0	3
PCNT	0.00	0.00	83.33	0.00	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	33.33
ACUM	0.00	0.00	83.33	83.33	83.33	83.33	83.33	83.33	83.33	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 FILTRATION TIME, 1 GALLON, MIN MEAN 5.8 SIGMA 1.8 REPORT 17. SAMPLES 16

	LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0 LEQ 11.0	GTR 11.0 LEQ 12.0	GTR 12.0	MISSING VALUES
FREQ	0	2	3	2	4	0	5	0	0	0	0	0	1
PCNT	0.00	12.50	18.75	12.50	25.00	0.00	31.25	0.00	0.00	0.00	0.00	0.00	5.88
ACUM	0.00	12.50	31.25	43.75	68.75	68.75	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 DELTA P IN MM OF HG — MEAN .3 SIGMA .88 REPORT 66. SAMPLES 51

		GTR 0.0 LEQ 0.0	GTR 1.0 LEQ 1.0	GTR 2.0 LEQ 2.0	GTR 3.0 LEQ 3.0	GTR 4.0 LEQ 4.0	GTR 5.0 LEQ 5.0	GTR 6.0 LEQ 6.0	GTR 7.0 LEQ 7.0	GTR 8.0 LEQ 8.0	GTR 9.0 LEQ 9.0	GTR 10.0 LEQ 10.0	MISSING VALUES
FREQ	44	3	2	1	0	1	0	0	0	0	0	0	15
PCNT	86.27	5.88	3.92	1.96	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	22.73
ACUM	86.27	92.16	96.08	98.04	98.04	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 DELTA P IN MM OF HG — MEAN .4 SIGMA 1.26 REPORT 169. SAMPLES 135

		GTR 0.0 LEQ 0.0	GTR 1.0 LEQ 1.0	GTR 2.0 LEQ 2.0	GTR 3.0 LEQ 3.0	GTR 4.0 LEQ 4.0	GTR 5.0 LEQ 5.0	GTR 6.0 LEQ 6.0	GTR 7.0 LEQ 7.0	GTR 8.0 LEQ 8.0	GTR 9.0 LEQ 9.0	GTR 10.0 LEQ 10.0	MISSING VALUES
FREQ	107	19	5	0	1	1	0	0	1	0	1	0	34
PCNT	79.26	14.07	3.70	0.00	.74	.74	0.00	0.00	.74	0.00	.74	0.00	20.12
ACUM	79.26	93.33	97.04	97.04	97.78	98.52	98.52	98.52	99.26	99.26	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 DELTA P IN MM OF HG — MEAN .2 SIGMA .41 REPORT 251. SAMPLES 213

		GTR 0.0 LEQ 0.0	GTR 1.0 LEQ 1.0	GTR 2.0 LEQ 2.0	GTR 3.0 LEQ 3.0	GTR 4.0 LEQ 4.0	GTR 5.0 LEQ 5.0	GTR 6.0 LEQ 6.0	GTR 7.0 LEQ 7.0	GTR 8.0 LEQ 8.0	GTR 9.0 LEQ 9.0	GTR 10.0 LEQ 10.0	MISSING VALUES
FREQ	159	47	7	0	0	0	0	0	0	0	0	0	38
PCNT	74.65	22.07	3.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.14
ACUM	74.65	96.71	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 DELTA P IN MM OF HG — MEAN .2 SIGMA .67 REPORT 60. SAMPLES 58

		GTR 0.0 LEQ 0.0	GTR 1.0 LEQ 1.0	GTR 2.0 LEQ 2.0	GTR 3.0 LEQ 3.0	GTR 4.0 LEQ 4.0	GTR 5.0 LEQ 5.0	GTR 6.0 LEQ 6.0	GTR 7.0 LEQ 7.0	GTR 8.0 LEQ 8.0	GTR 9.0 LEQ 9.0	GTR 10.0 LEQ 10.0	MISSING VALUES
FREQ	50	4	3	0	1	0	0	0	0	0	0	0	2
PCNT	86.21	6.90	5.17	0.00	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.33
ACUM	86.21	93.10	98.28	98.28	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table XXIII. Thermal Stability, ΔP

DISTRICT 5 DELTA P IN MM OF HG MEAN .2 SIGMA .67 REPORT 77. SAMPLES 60

	LEQ 0.0	GTR 0.0 LEQ 1.0	GTR 1.0 LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0	MISSING VALUES
FREQ	53	3	4	0	1	0	0	0	0	0	0	0	17
PCNT	88.33	5.00	6.67	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.08
ACUM	88.33	93.33	100.00	100.00	101.67	101.67	101.67	101.67	101.67	101.67	101.67	101.67	PCNT OF REPORTS

DISTRICT 7 DELTA P IN MM OF HG MEAN .6 SIGMA 1.33 REPORT 9. SAMPLES 5

	LEQ 0.0	GTR 0.0 LEQ 1.0	GTR 1.0 LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0	MISSING VALUES
FREQ	3	1	0	1	0	0	0	0	0	0	0	0	4
PCNT	60.00	20.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.44
ACUM	60.00	80.00	80.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 DELTA P IN MM OF HG MEAN .1 SIGMA .04 REPORT 17. SAMPLES 13

	LEQ 0.0	GTR 0.0 LEQ 1.0	GTR 1.0 LEQ 2.0	GTR 2.0 LEQ 3.0	GTR 3.0 LEQ 4.0	GTR 4.0 LEQ 5.0	GTR 5.0 LEQ 6.0	GTR 6.0 LEQ 7.0	GTR 7.0 LEQ 8.0	GTR 8.0 LEQ 9.0	GTR 9.0 LEQ 10.0	GTR 10.0	MISSING VALUES
FREQ	4	9	0	0	0	0	0	0	0	0	0	0	4
PCNT	30.77	69.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.53
ACUM	30.77	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 1 VISUAL RATING — MEAN .7 SIGMA .50 REPORT 66. SAMPLES 51

		GTR 0.0 LEQ 0.0	GTR .5 LEQ .5	GTR 1.0 LEQ 1.0	GTR 1.5 LEQ 1.5	GTR 2.0 LEQ 2.0	GTR 2.5 LEQ 2.5	GTR 3.0 LEQ 3.0	GTR 3.5 LEQ 3.5	GTR 4.0 LEQ 4.0	GTR 4.5 LEQ 4.5	GTR 5.0 LEQ 5.0	MISSING VALUES
FREQ	17	2	30	0	1	0	0	0	0	0	0	0	15
PCNT	33.33	5.88	58.82	0.00	1.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.73
ACUM	33.33	39.22	98.04	98.04	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 2 VISUAL RATING — MEAN .9 SIGMA .60 REPORT 169. SAMPLES 135

		GTR 0.0 LEQ 0.0	GTR .5 LEQ .5	GTR 1.0 LEQ 1.0	GTR 1.5 LEQ 1.5	GTR 2.0 LEQ 2.0	GTR 2.5 LEQ 2.5	GTR 3.0 LEQ 3.0	GTR 3.5 LEQ 3.5	GTR 4.0 LEQ 4.0	GTR 4.5 LEQ 4.5	GTR 5.0 LEQ 5.0	MISSING VALUES
FREQ	30	5	80	7	11	1	1	0	0	0	0	0	34
PCNT	22.22	3.70	59.26	5.19	8.15	.74	.74	0.00	0.00	0.00	0.00	0.00	20.12
ACUM	22.22	25.93	85.19	90.37	98.52	99.26	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 3 VISUAL RATING — MEAN .8 SIGMA .48 REPORT 251. SAMPLES 215

		GTR 0.0 LEQ 0.0	GTR .5 LEQ .5	GTR 1.0 LEQ 1.0	GTR 1.5 LEQ 1.5	GTR 2.0 LEQ 2.0	GTR 2.5 LEQ 2.5	GTR 3.0 LEQ 3.0	GTR 3.5 LEQ 3.5	GTR 4.0 LEQ 4.0	GTR 4.5 LEQ 4.5	GTR 5.0 LEQ 5.0	MISSING VALUES
FREQ	48	3	155	1	8	0	0	0	0	0	0	0	36
PCNT	22.33	1.40	72.09	.47	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.34
ACUM	22.33	23.72	95.81	96.28	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

DISTRICT 4 VISUAL RATING — MEAN .5 SIGMA .52 REPORT 60. SAMPLES 58

		GTR 0.0 LEQ 0.0	GTR .5 LEQ .5	GTR 1.0 LEQ 1.0	GTR 1.5 LEQ 1.5	GTR 2.0 LEQ 2.0	GTR 2.5 LEQ 2.5	GTR 3.0 LEQ 3.0	GTR 3.5 LEQ 3.5	GTR 4.0 LEQ 4.0	GTR 4.5 LEQ 4.5	GTR 5.0 LEQ 5.0	MISSING VALUES
FREQ	30	1	26	1	0	0	0	0	0	0	0	0	2
PCNT	51.72	1.72	44.83	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.33
ACUM	51.72	53.45	98.28	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

Table XXIV. Thermal Stability Tube Color Code

DISTRICT 5 VISUAL RATING MEAN .7 SIGMA .45 REPORT 77. SAMPLES 60

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	16	2	41	1	0	0	0	0	0	0	0	0	17
PCNT	26.67	3.33	68.33	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.08
ACUM	26.67	30.00	98.33	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 7 VISUAL RATING MEAN 1.0 SIGMA 0.00 REPORT 9. SAMPLES 5

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	0	0	5	0	0	0	0	0	0	0	0	0	4
PCNT	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.44
ACUM	0.00	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

DISTRICT 8 VISUAL RATING MEAN .8 SIGMA .38 REPORT 17. SAMPLES 13

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	2	0	11	0	0	0	0	0	0	0	0	0	4
PCNT	15.38	0.00	84.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.53
ACUM	15.38	15.38	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

Table XXV. 1978 Totals (All Properties)

1978 TOTALS DISTILLATN INIT. BOILING PT. DEG F MEAN 138. SIGMA 13.1 REPORT 651. SAMPLES 610

		GTR 115. LEQ 115.	GTR 120. LEQ 120.	GTR 125. LEQ 125.	GTR 130. LEQ 130.	GTR 135. LEQ 135.	GTR 140. LEQ 140.	GTR 145. LEQ 145.	GTR 150. LEQ 150.	GTR 155. LEQ 155.	GTR 160. LEQ 160.	GTR 165.	MISSING VALUES
FREQ	26	29	29	92	93	98	76	49	43	31	25	11	41
PCNT	4.26	4.75	4.75	15.07	15.25	16.07	12.79	8.03	7.05	5.08	4.10	1.80	6.30
ACUM	4.26	9.02	13.77	28.84	45.09	61.15	73.93	81.97	89.02	94.10	98.20	100.00	PCNT OF REPORTS

1978 TOTALS DISTILLATN 10% RECOVERED, DEG F MEAN 201. SIGMA 10.9 REPORT 651. SAMPLES 645

		GTR 185. LEQ 185.	GTR 190. LEQ 190.	GTR 195. LEQ 195.	GTR 200. LEQ 200.	GTR 205. LEQ 205.	GTR 210. LEQ 210.	GTR 215. LEQ 215.	GTR 220. LEQ 220.	GTR 225. LEQ 225.	GTR 230. LEQ 230.	GTR 235.	MISSING VALUES
FREQ	111	75	50	64	68	85	46	53	24	24	10	26	6
PCNT	17.21	11.63	7.75	10.77	10.54	13.80	7.13	8.22	3.72	3.72	1.55	4.03	.92
ACUM	17.21	28.84	36.59	47.29	57.83	71.63	78.76	86.98	90.70	94.42	95.97	100.00	PCNT OF REPORTS

1978 TOTALS DISTILLATN 20% RECOVERED, DEG F MEAN 228. SIGMA 20.9 REPORT 651. SAMPLES 638

		GTR 175. LEQ 175.	GTR 180. LEQ 180.	GTR 185. LEQ 185.	GTR 190. LEQ 190.	GTR 195. LEQ 195.	GTR 200. LEQ 200.	GTR 205. LEQ 205.	GTR 210. LEQ 210.	GTR 215. LEQ 215.	GTR 220. LEQ 220.	GTR 225.	MISSING VALUES
FREQ	0	1	31	51	98	123	130	86	51	27	25	15	13
PCNT	0.00	.16	4.86	7.99	15.36	19.28	20.38	13.48	7.99	4.23	3.92	2.35	2.00
ACUM	0.00	.16	5.02	13.01	28.37	47.65	68.03	81.50	89.50	93.73	97.65	100.00	PCNT OF REPORTS

1978 TOTALS DISTILLATN 50% RECOVERED, DEG F MEAN 295. SIGMA 27.4 REPORT 651. SAMPLES 631

		GTR 220. LEQ 220.	GTR 235. LEQ 235.	GTR 250. LEQ 250.	GTR 265. LEQ 265.	GTR 280. LEQ 280.	GTR 295. LEQ 295.	GTR 310. LEQ 310.	GTR 325. LEQ 325.	GTR 340. LEQ 340.	GTR 355. LEQ 355.	GTR 370.	MISSING VALUES
FREQ	0	6	16	69	110	111	126	100	52	22	10	0	20
PCNT	0.00	.95	2.54	10.94	18.86	17.59	19.97	15.85	8.24	3.49	1.58	0.00	3.07
ACUM	0.00	.95	3.49	14.42	33.28	50.87	70.84	86.69	94.93	98.42	100.00	100.00	PCNT OF REPORTS

1978 TOTALS DISTILLATN 90% RECOVERED, DEG F MEAN 401. SIGMA 33.9 REPORT 651. SAMPLES 640

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	320.	335.	350.	365.	380.	395.	410.	425.	440.	455.	470.		
FREQ	11	17	44	36	52	66	91	143	136	41	3	0	11
PCNT	1.72	2.66	6.88	5.63	8.13	10.31	14.22	22.34	21.25	6.41	.47	0.00	1.69
ACUM	1.72	4.38	11.25	16.86	25.00	35.31	49.53	71.88	93.12	99.53	100.00	100.00	PCNT OF REPORTS

1978 TOTALS DISTILLATN END POINT, DEG F MEAN 459. SIGMA 31.9 REPORT 651. SAMPLES 647

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		380.	395.	410.	425.	440.	455.	470.	485.	500.	515.	530.	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	380.	395.	410.	425.	440.	455.	470.	485.	500.	515.	530.		
FREQ	11	17	41	39	37	82	140	141	112	27	0	0	4
PCNT	1.70	2.63	6.34	6.03	5.72	12.67	21.64	21.79	17.31	4.17	0.00	0.00	.61
ACUM	1.70	4.33	10.66	16.69	22.41	35.09	56.72	78.52	95.83	100.00	100.00	100.00	PCNT OF REPORTS

1978 TOTALS PERCENT RECOVERED AT 400 F MEAN 90.1 SIGMA 7.09 REPORT 651. SAMPLES 231

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		76.0	78.0	80.0	82.0	84.0	86.0	88.0	90.0	92.0	94.0	96.0	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	78.0	80.0	82.0	84.0	86.0	88.0	90.0	92.0	94.0	96.0	98.0		
FREQ	15	7	14	14	22	24	13	20	12	17	52	17	420
PCNT	6.49	3.03	7.79	6.06	9.52	10.39	5.63	8.66	5.19	7.36	22.51	7.36	64.52
ACUM	6.49	9.52	17.32	23.38	32.90	43.29	48.92	57.58	62.77	70.13	92.64	100.00	PCNT OF REPORTS

1978 TOTALS GRAVITY, DEG API MEAN 53.9 SIGMA 1.86 REPORT 651. SAMPLES 628

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	MISSING
		47.0	48.0	49.0	50.0	51.0	52.0	53.0	54.0	55.0	56.0	57.0	VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	47.0	48.0	49.0	50.0	51.0	52.0	53.0	54.0	55.0	56.0	57.0		
FREQ	2	4	5	6	22	50	102	126	110	123	78	0	23
PCNT	.32	.64	.80	.96	3.50	7.96	16.24	20.06	17.52	19.59	12.42	0.00	3.53
ACUM	.32	.96	1.75	2.71	6.21	14.17	30.41	50.48	67.99	87.58	100.00	100.00	PCNT OF REPORTS

1978 TOTALS EXISTENT GUM, MG/100ML MEAN .6 SIGMA .64 REPORT 651. SAMPLES 609

	LEQ 0.0	GTR 0.0 LEQ .5	GTR .5 LEQ 1.0	GTR 1.0 LEQ 1.5	GTR 1.5 LEQ 2.0	GTR 2.0 LEQ 2.5	GTR 2.5 LEQ 3.0	GTR 3.0 LEQ 3.5	GTR 3.5 LEQ 4.0	GTR 4.0 LEQ 4.5	GTR 4.5 LEQ 5.0	GTR 5.0	MISSING VALUES
FREQ	276	209	60	33	11	10	1	3	0	1	0	0	42
PCNT	45.32	34.32	9.85	6.24	1.81	1.64	.16	.49	0.00	.16	0.00	0.00	6.45
ACUM	45.32	79.64	89.49	95.73	97.54	99.18	99.34	99.84	99.84	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS TOTAL SULFUR, WEIGHT PERCENT MEAN .042 SIGMA .042 REPORT 651. SAMPLES 597

	LEQ 0.000	GTR 0.000 LEQ .050	GTR .050 LEQ .100	GTR .100 LEQ .150	GTR .150 LEQ .200	GTR .200 LEQ .250	GTR .250 LEQ .300	GTR .300 LEQ .350	GTR .350 LEQ .400	GTR .400 LEQ .450	GTR .450 LEQ .500	GTR .500	MISSING VALUES
FREQ	1	461	86	31	14	2	2	0	0	0	0	0	54
PCNT	.17	77.22	14.41	5.19	2.35	.34	.34	0.00	0.00	0.00	0.00	0.00	8.29
ACUM	.17	77.39	91.79	96.98	99.33	99.66	100.00	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS MERCAPTAN SULFUR, WEIGHT PERCENT MEAN .0005 SIGMA .00029 REPORT 651. SAMPLES 287

	LEQ 0.0000	GTR 0.0000 LEQ .0001	GTR .0001 LEQ .0002	GTR .0002 LEQ .0003	GTR .0003 LEQ .0004	GTR .0004 LEQ .0005	GTR .0005 LEQ .0006	GTR .0006 LEQ .0007	GTR .0007 LEQ .0008	GTR .0008 LEQ .0009	GTR .0009 LEQ .0010	GTR .0010	MISSING VALUES
FREQ	0	50	48	46	31	31	23	12	13	8	33	0	364
PCNT	0.00	17.42	17.94	16.03	10.80	10.80	8.01	4.18	4.53	2.79	11.50	0.00	55.91
ACUM	0.00	17.42	31.36	47.39	58.19	68.99	77.00	81.18	85.71	88.50	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS REID VAPOR PRESSURE,LBS MEAN 2.6 SIGMA .24 REPORT 651. SAMPLES 629

	LEQ 2.0	GTR 2.0 LEQ 2.1	GTR 2.1 LEQ 2.2	GTR 2.2 LEQ 2.3	GTR 2.3 LEQ 2.4	GTR 2.4 LEQ 2.5	GTR 2.5 LEQ 2.6	GTR 2.6 LEQ 2.7	GTR 2.7 LEQ 2.8	GTR 2.8 LEQ 2.9	GTR 2.9 LEQ 3.0	GTR 3.0	MISSING VALUES
FREQ	4	23	39	44	72	66	107	108	74	65	27	0	22
PCNT	.64	3.66	6.20	7.00	11.45	10.49	17.01	17.17	11.76	10.33	4.29	0.00	3.38
ACUM	.64	4.29	10.49	17.49	28.93	39.43	56.44	73.61	85.37	95.71	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS HEAT OF COMBUSTION (CALCD) MJ/KG MEAN 43.5 SIGMA .1 REPORT 651. SAMPLES 597

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	MISSING
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		VALUES
	42.9	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9		
FREQ	0	0	0	6	28	64	116	194	156	31	2	0	54
PCNT	0.00	0.00	0.00	1.01	4.69	10.72	19.43	32.50	26.13	5.19	.34	0.00	8.29
ACUM	0.00	0.00	0.00	1.01	5.70	16.42	35.85	68.34	94.47	99.66	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS AROMATIC CONTENT, VOLUME PERCENT MEAN 11.4 SIGMA 3.25 REPORT 651. SAMPLES 614

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	MISSING
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		VALUES
	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0		
FREQ	0	0	5	44	189	173	117	64	13	9	0	0	37
PCNT	0.00	0.00	.81	7.17	30.78	28.18	19.06	10.42	2.12	1.47	0.00	0.00	5.68
ACUM	0.00	0.00	.81	7.98	38.76	66.94	85.99	96.42	98.53	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS OLEFIN CONTENT, VOLUME PERCENT MEAN .8 SIGMA .42 REPORT 651. SAMPLES 604

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		0.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	MISSING
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		VALUES
	0.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0		
FREQ	6	171	328	67	22	6	2	2	0	0	0	0	47
PCNT	.99	28.31	54.30	11.09	3.64	.99	.33	.33	0.00	0.00	0.00	0.00	7.22
ACUM	.99	29.30	83.61	94.70	98.34	99.34	99.67	100.00	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS PERCNT HYDROGEN (CALCD) MEAN 14.36 SIGMA .22 REPORT 651. SAMPLES 572

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		13.60	13.75	13.90	14.05	14.20	14.35	14.50	14.65	14.80	14.95	15.10	MISSING
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		VALUES
	13.60	13.75	13.90	14.05	14.20	14.35	14.50	14.65	14.80	14.95	15.10		
FREQ	0	3	21	37	69	113	146	139	44	0	0	0	79
PCNT	0.00	.52	3.67	6.47	12.06	19.76	25.52	24.30	7.69	0.00	0.00	0.00	12.14
ACUM	0.00	.52	4.20	10.66	22.73	42.48	68.01	92.31	100.00	100.00	100.00	100.00	PRCNT OF REPORTS

1978 TOTALS SMOKE POINT MEAN 27.6 SIGMA 3.30 REPORT 651. SAMPLES 569

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0	36.0	38.0	MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ		
	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0	36.0	38.0		
FREQ	0	2	24	75	124	124	96	93	19	14	4	0	82
PCNT	0.00	.35	4.22	13.18	21.79	21.79	15.82	16.34	3.34	2.46	.70	0.00	12.60
ACUM	0.00	.35	4.57	17.75	39.54	61.34	77.15	93.50	96.84	99.30	100.00	100.00	PCNT OF REPORTS

1978 TOTALS WATER SEPARATION INDEX MODIFIED MEAN 90. SIGMA 7.2 REPORT 651. SAMPLES 642

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		70.	73.	76.	79.	82.	85.	88.	91.	94.	97.	100.		MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ			
	70.	73.	76.	79.	82.	85.	88.	91.	94.	97.	100.			
FREQ	0	9	27	38	54	46	80	80	113	107	88	0		9
PCNT	0.00	1.40	4.21	5.92	8.41	7.17	12.46	12.46	17.60	16.67	13.71	0.00		1.36
ACUM	0.00	1.40	5.61	11.53	19.94	27.10	39.56	52.02	69.63	86.29	100.00	100.00	PCNT OF REPORTS	

1978 TOTALS PARTICULATE CONTAMINATE, MG/LITER MEAN .37 SIGMA .24 REPORT 651. SAMPLES 625

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		0.00	.10	.20	.30	.40	.50	.60	.70	.80	.90	1.00		MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ			
	0.00	.10	.20	.30	.40	.50	.60	.70	.80	.90	1.00			
FREQ	10	109	120	93	95	50	49	29	37	24	9	0		26
PCNT	1.60	17.44	19.20	14.88	15.20	8.00	7.84	4.64	5.92	3.84	1.44	0.00		3.99
ACUM	1.60	19.04	38.24	53.12	68.32	76.32	84.16	88.80	94.72	98.56	100.00	100.00	PCNT OF REPORTS	

1978 TOTALS ACID NUMBER, MG KOH/GRAM MEAN .006 SIGMA .0028 REPORT 651. SAMPLES 599

		GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	GTR	
		0.000	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020		MISSING VALUES
	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ	LEQ			
	0.000	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020			
FREQ	2	95	120	170	115	66	18	9	2	0	0	0		52
PCNT	.33	15.86	20.03	28.38	19.20	11.35	3.01	1.50	.33	0.00	0.00	0.00		7.99
ACUM	.33	16.19	36.23	64.61	83.81	95.16	98.16	99.67	100.00	100.00	100.00	100.00	PCNT OF REPORTS	

1978 TOTALS FILTRATION TIME, 1 GALLON, MIN MEAN 5.1 SIGMA 2.1 REPORT 651. SAMPLES 627

		GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	GTR 11.0	GTR 12.0	MISSING VALUES
	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0	LEQ 11.0	LEQ 12.0		
FREQ	4	88	173	180	72	48	24	5	7	6	7	11	24
PCNT	.64	14.04	27.59	28.71	11.48	7.66	3.83	.80	1.12	1.28	1.12	1.75	3.69
ACUM	.64	14.67	42.26	70.97	82.46	90.11	93.94	94.74	95.85	97.13	98.25	100.00	PCNT OF REPORTS

1978 TOTALS DELTA P IN MM OF HG MEAN 1.1 SIGMA 1.5 REPORT 651. SAMPLES 115

		GTR 0.0	GTR 1.0	GTR 2.0	GTR 3.0	GTR 4.0	GTR 5.0	GTR 6.0	GTR 7.0	GTR 8.0	GTR 9.0	GTR 10.0	MISSING VALUES
	LEQ 0.0	LEQ 1.0	LEQ 2.0	LEQ 3.0	LEQ 4.0	LEQ 5.0	LEQ 6.0	LEQ 7.0	LEQ 8.0	LEQ 9.0	LEQ 10.0		
FREQ	0	85	21	2	3	2	0	0	1	0	1	0	536
PCNT	0.00	73.91	18.26	1.74	2.61	1.74	0.00	0.00	.87	0.00	.87	0.00	82.33
ACUM	0.00	73.91	92.17	93.91	96.52	98.26	98.26	98.26	99.13	99.13	100.00	100.00	PCNT OF REPORTS

1978 TOTALS VISUAL RATING MEAN 1.0 SIGMA .3 REPORT 651. SAMPLES 394

		GTR 0.0	GTR .5	GTR 1.0	GTR 1.5	GTR 2.0	GTR 2.5	GTR 3.0	GTR 3.5	GTR 4.0	GTR 4.5	GTR 5.0	MISSING VALUES
	LEQ 0.0	LEQ .5	LEQ 1.0	LEQ 1.5	LEQ 2.0	LEQ 2.5	LEQ 3.0	LEQ 3.5	LEQ 4.0	LEQ 4.5	LEQ 5.0		
FREQ	0	14	348	10	20	1	1	0	0	0	0	0	257
PCNT	0.00	3.55	88.32	2.54	5.08	.25	.25	0.00	0.00	0.00	0.00	0.00	39.48
ACUM	0.00	3.55	91.88	94.42	99.49	99.75	100.00	100.00	100.00	100.00	100.00	100.00	PCNT OF REPORTS

NOTE: Of the missing values reported here in Fuel Thermal Stability, (i.e., Delta P and Visual Rating), 116 of those are really missing values. The balance was actually reported as 0.0

APPENDIX B - Histograms for 1978 Data

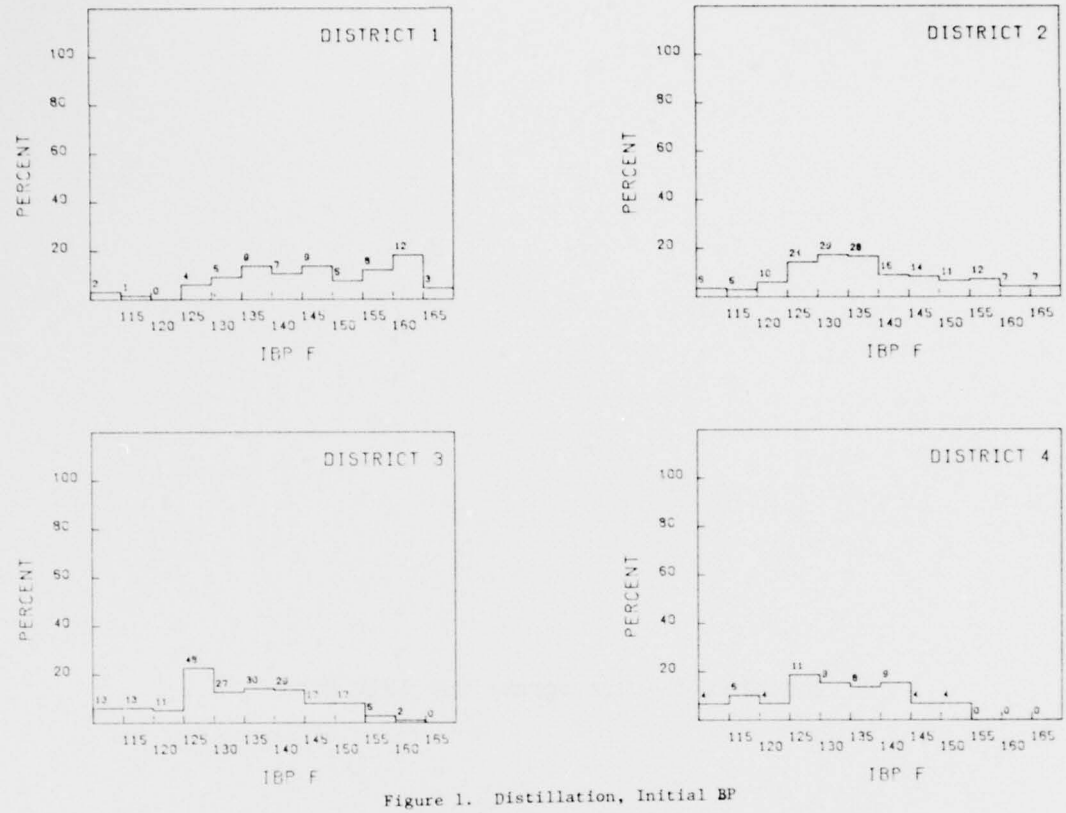
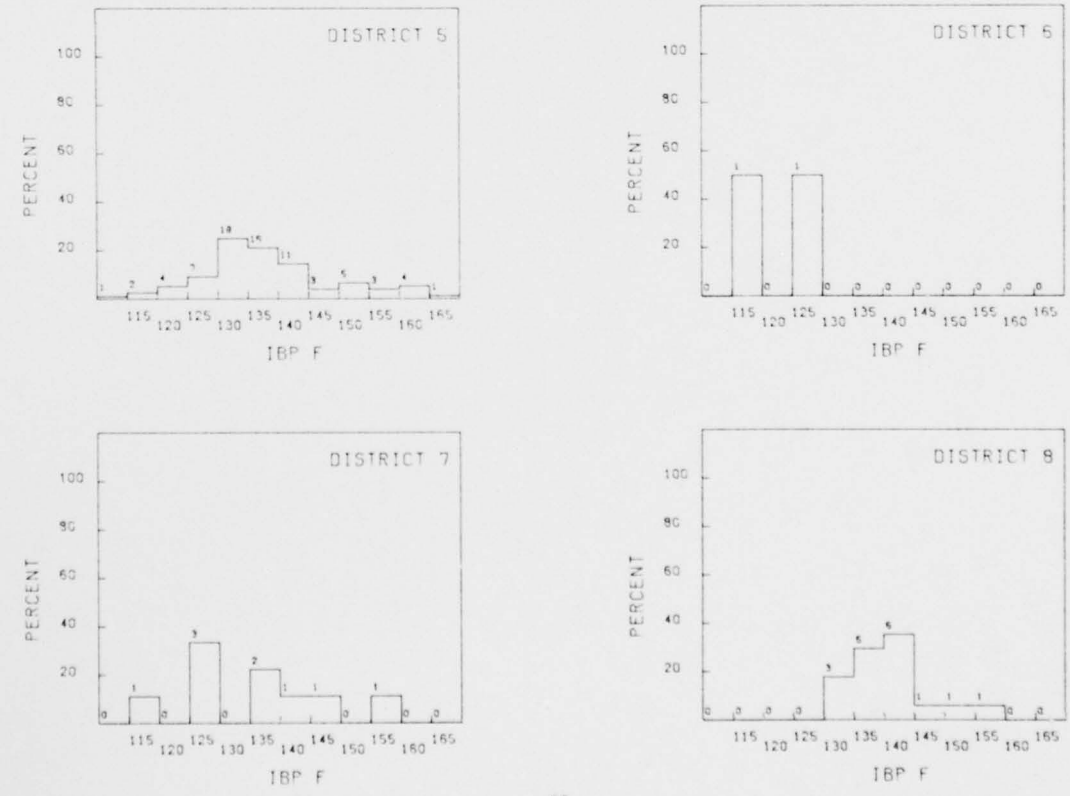


Figure 1. Distillation, Initial BP



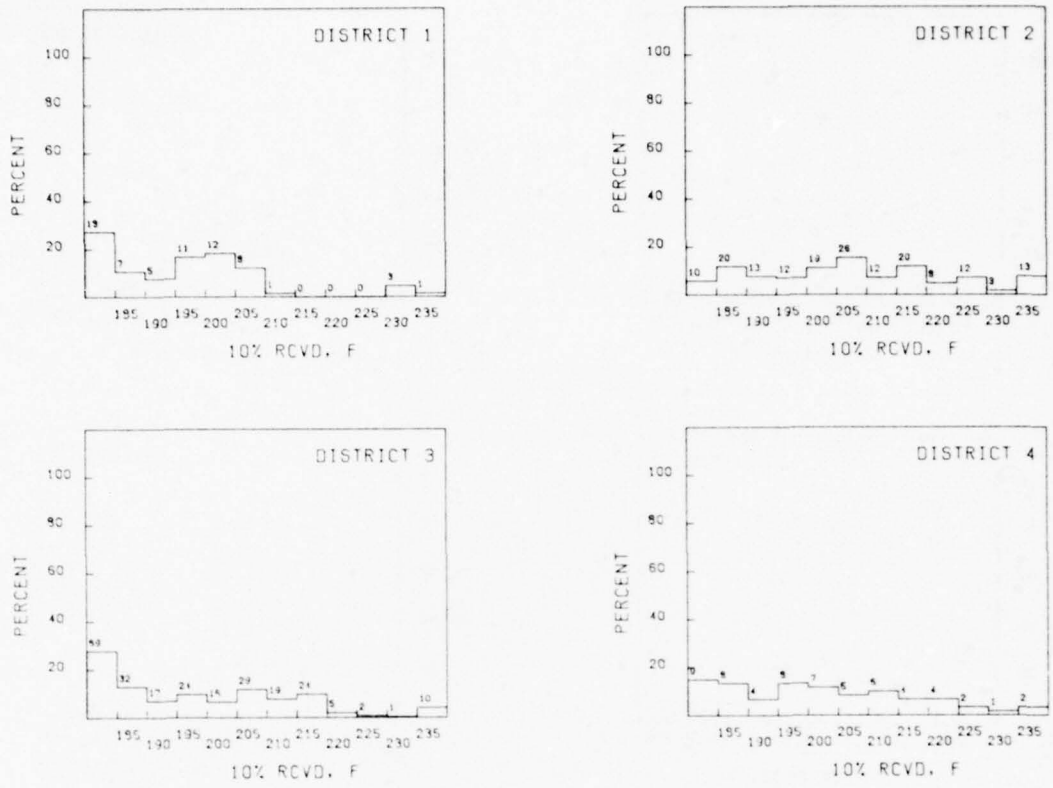
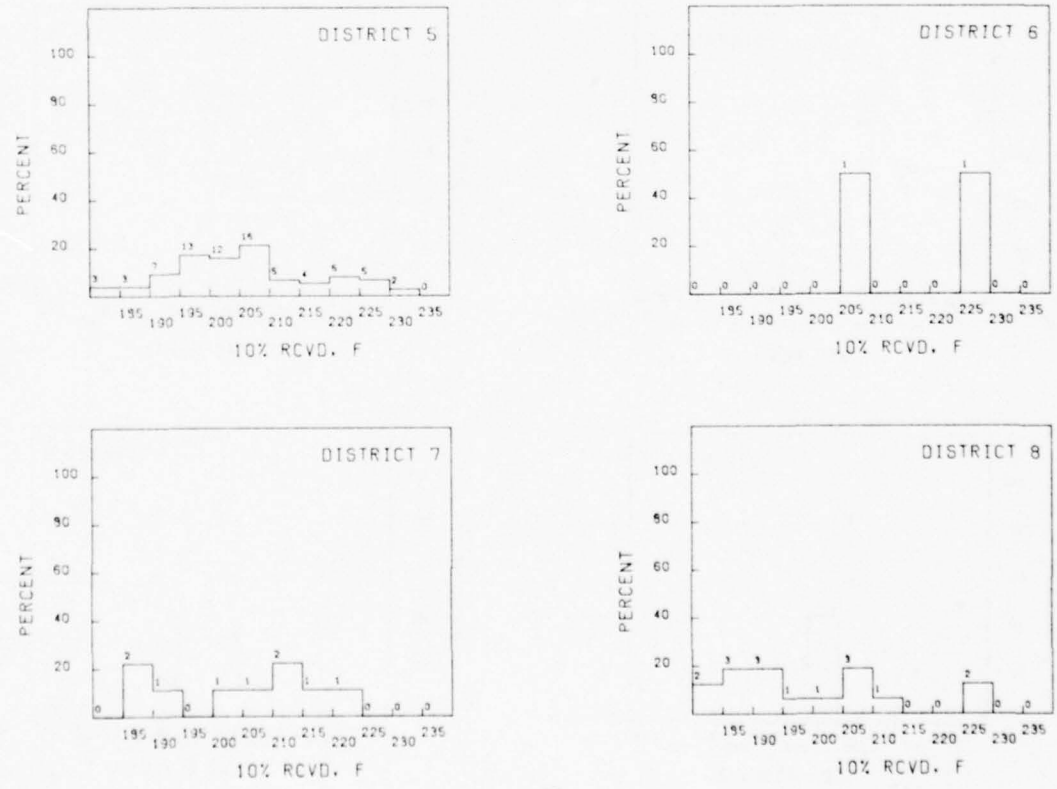


Figure 2. Distillation, 10% Recovered



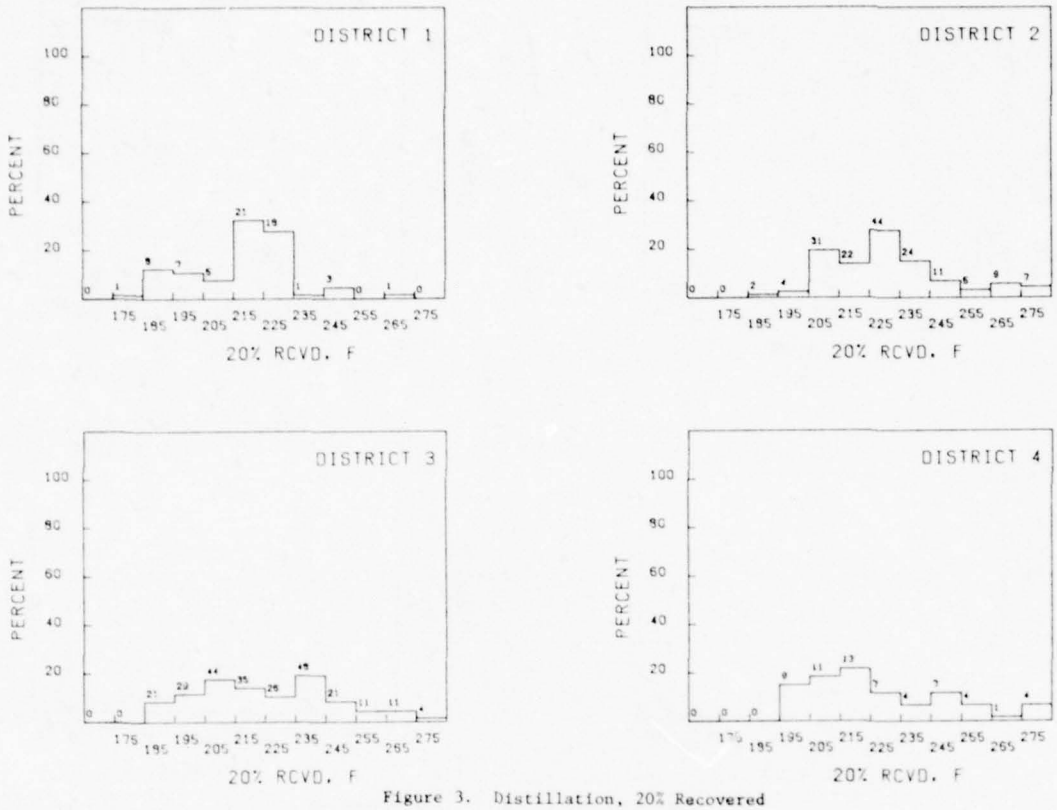
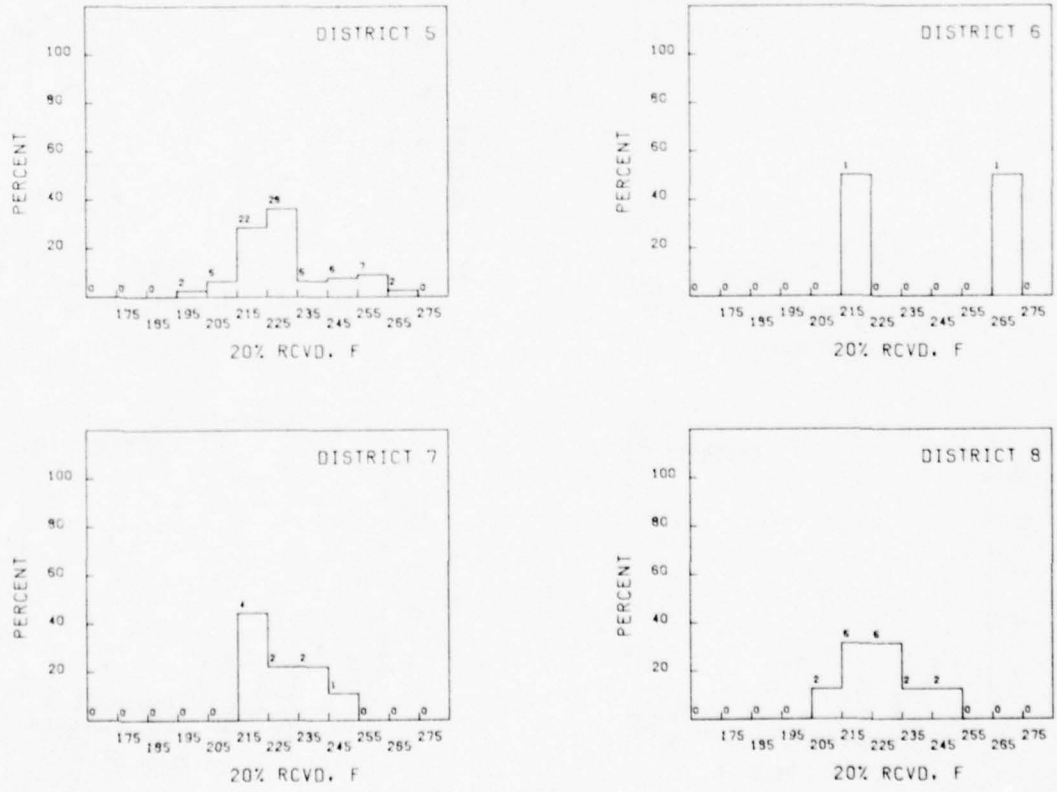


Figure 3. Distillation, 20% Recovered



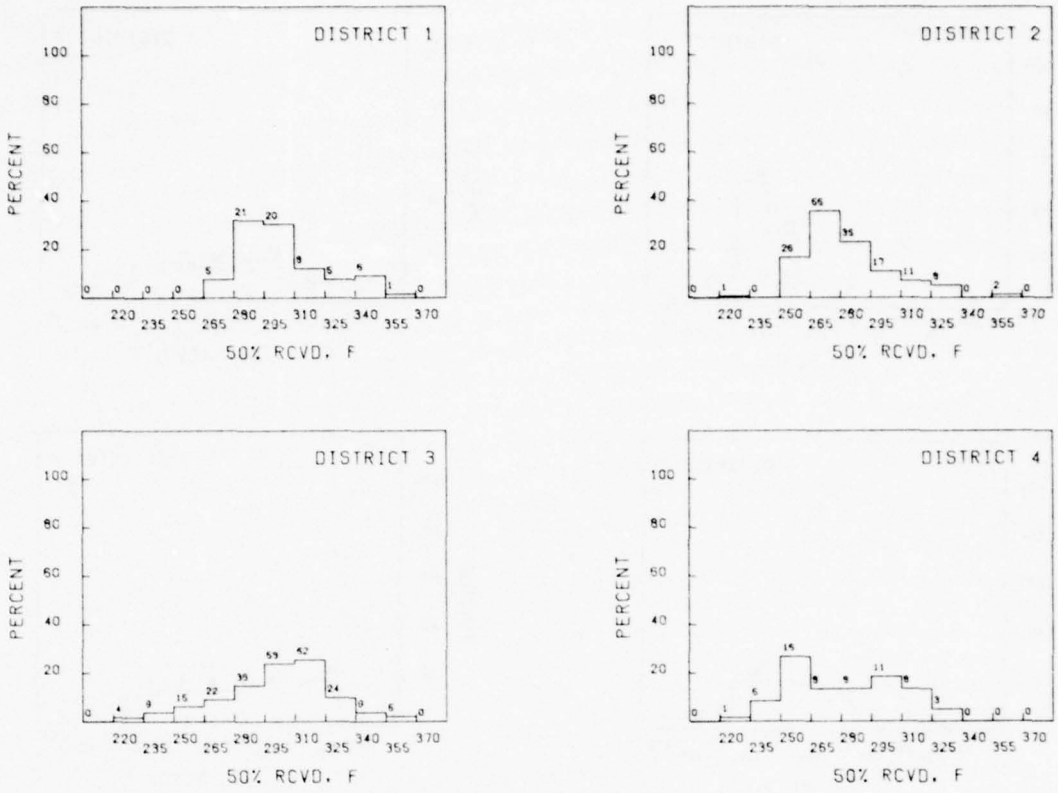
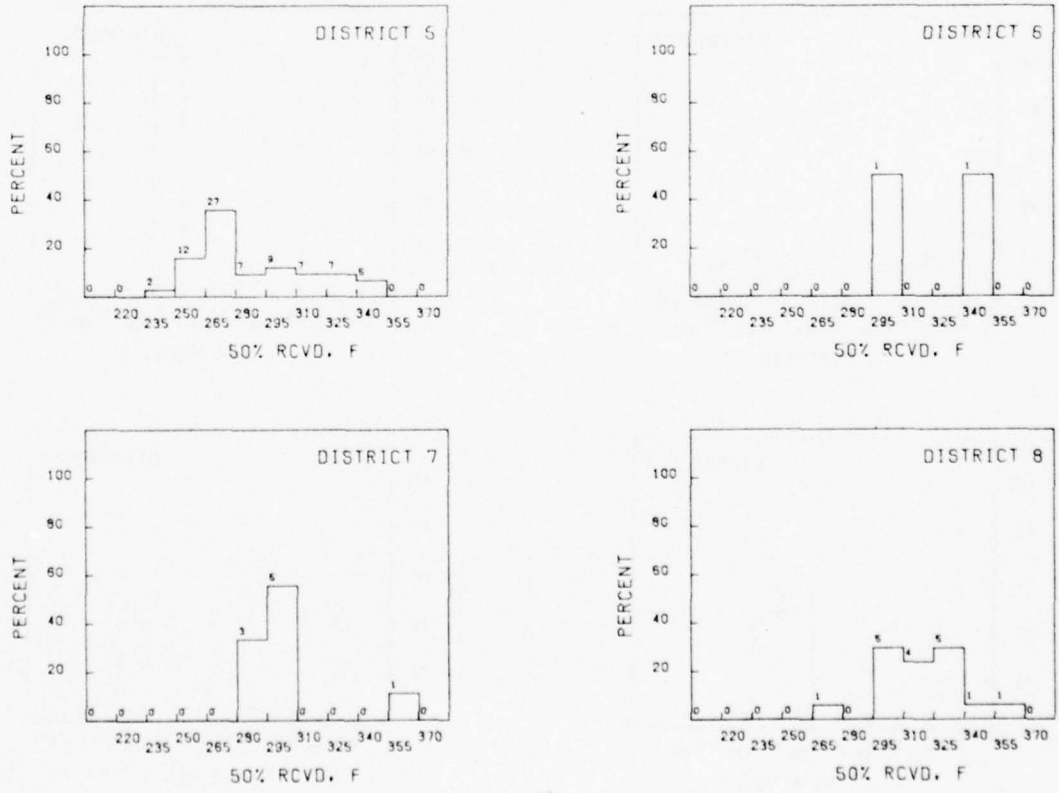


Figure 4. Distillation, 50% Recovered



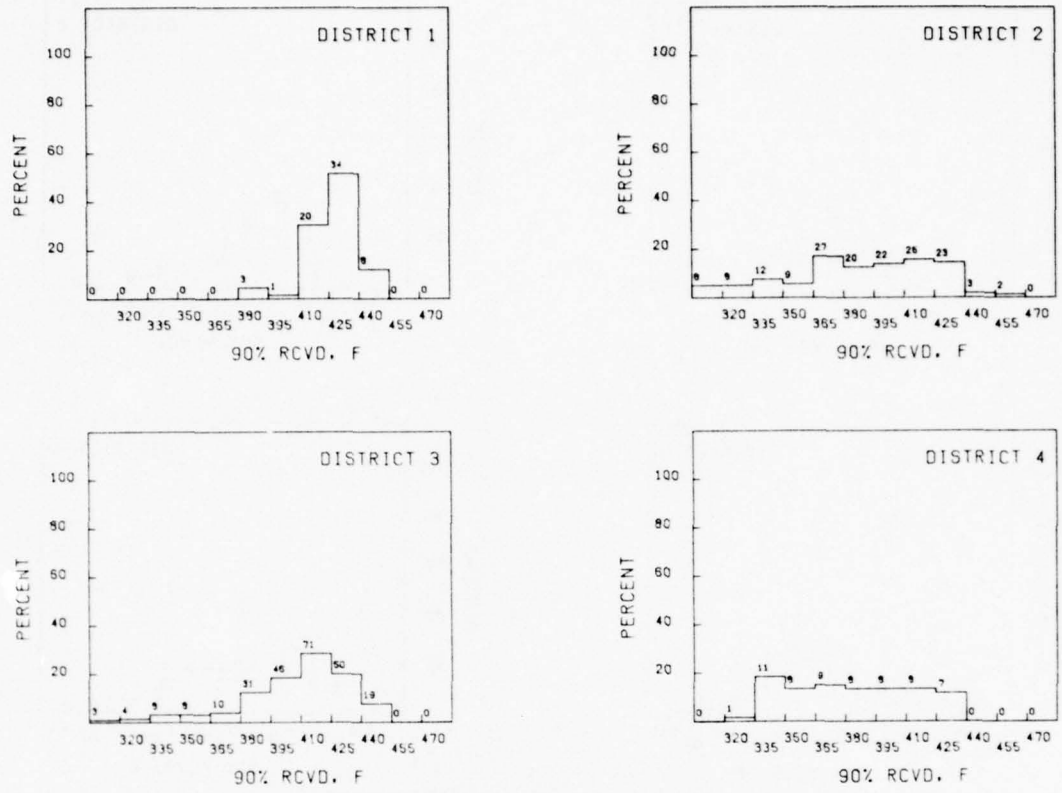
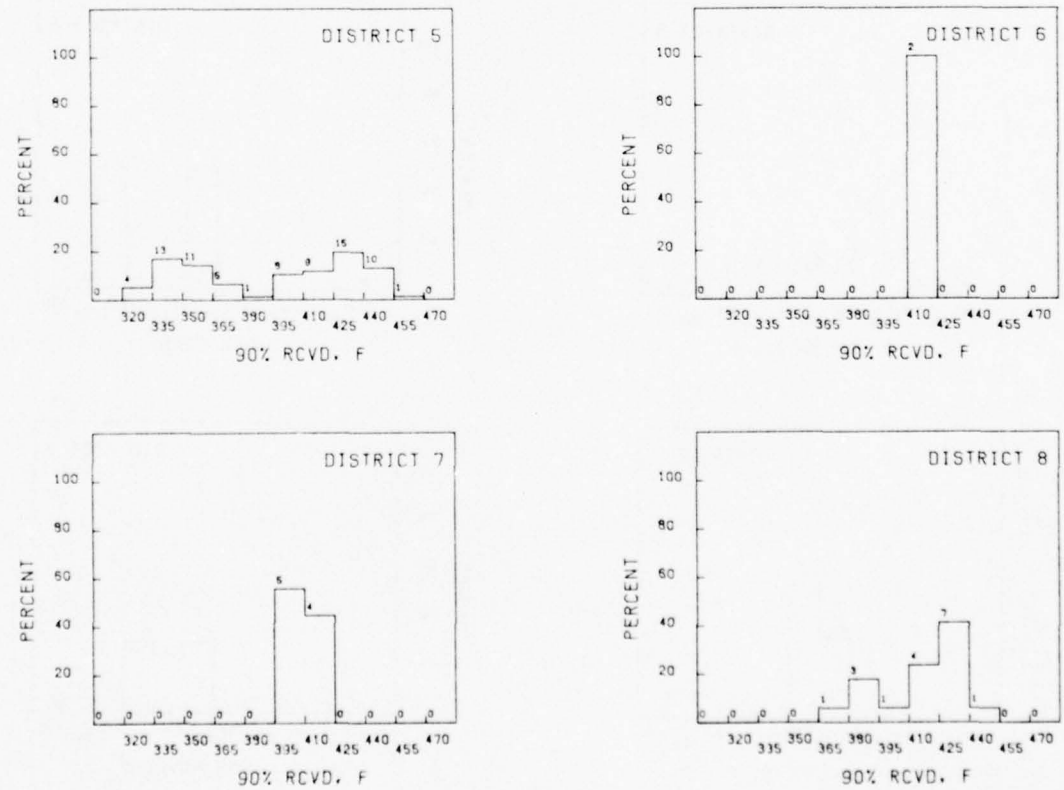


Figure 5. Distillation, 90% Recovered



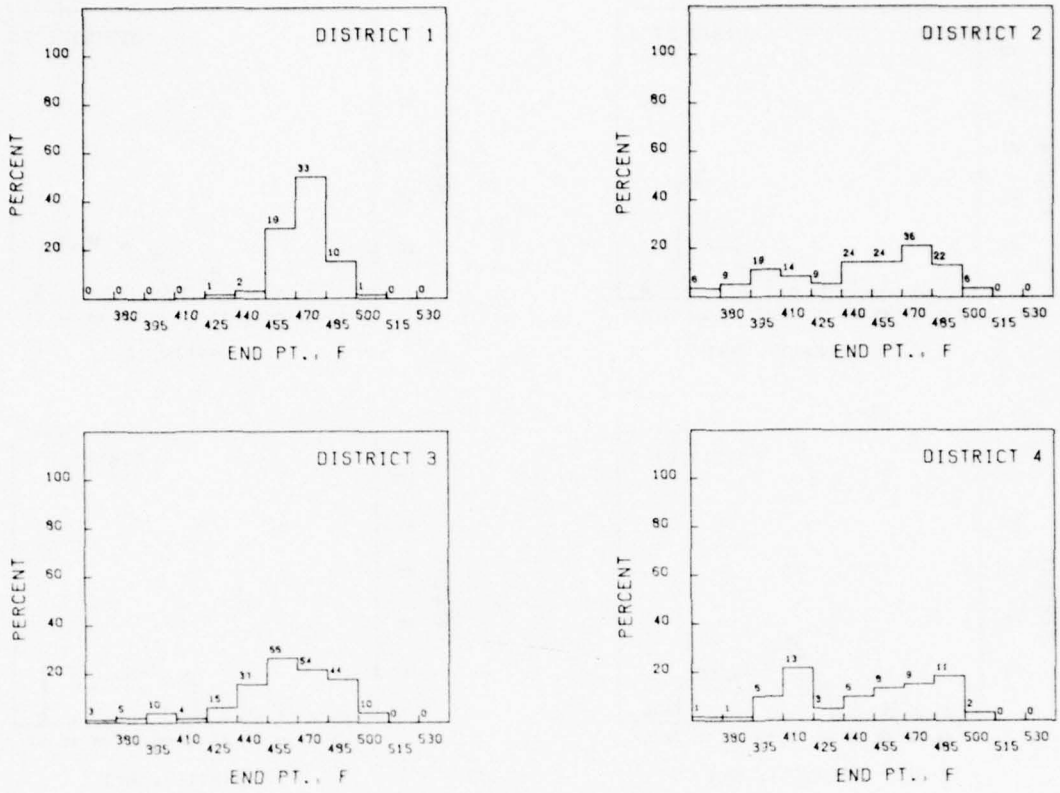
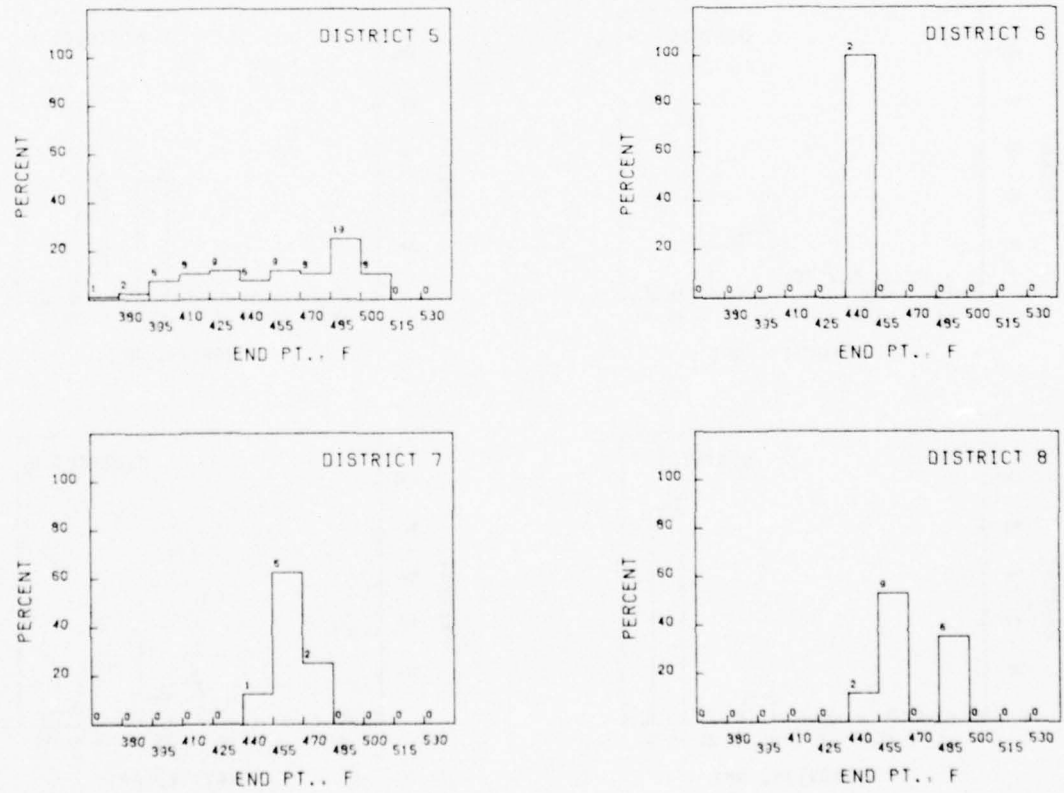


Figure 6. Distillation, End Point



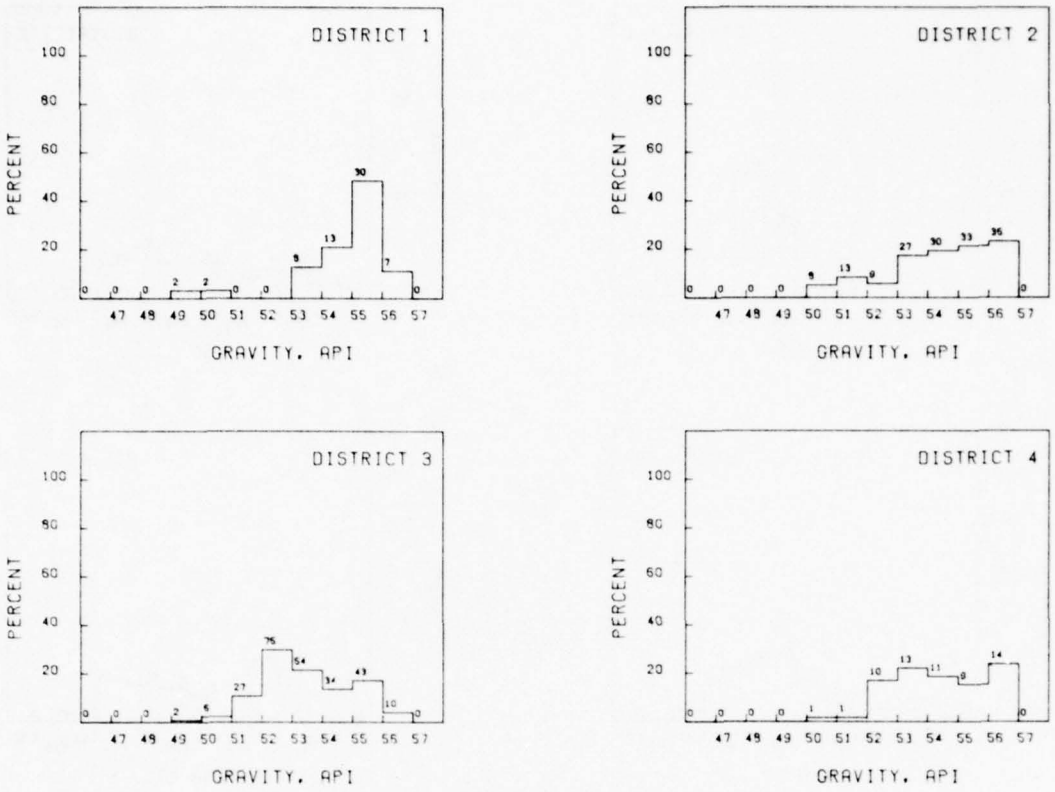
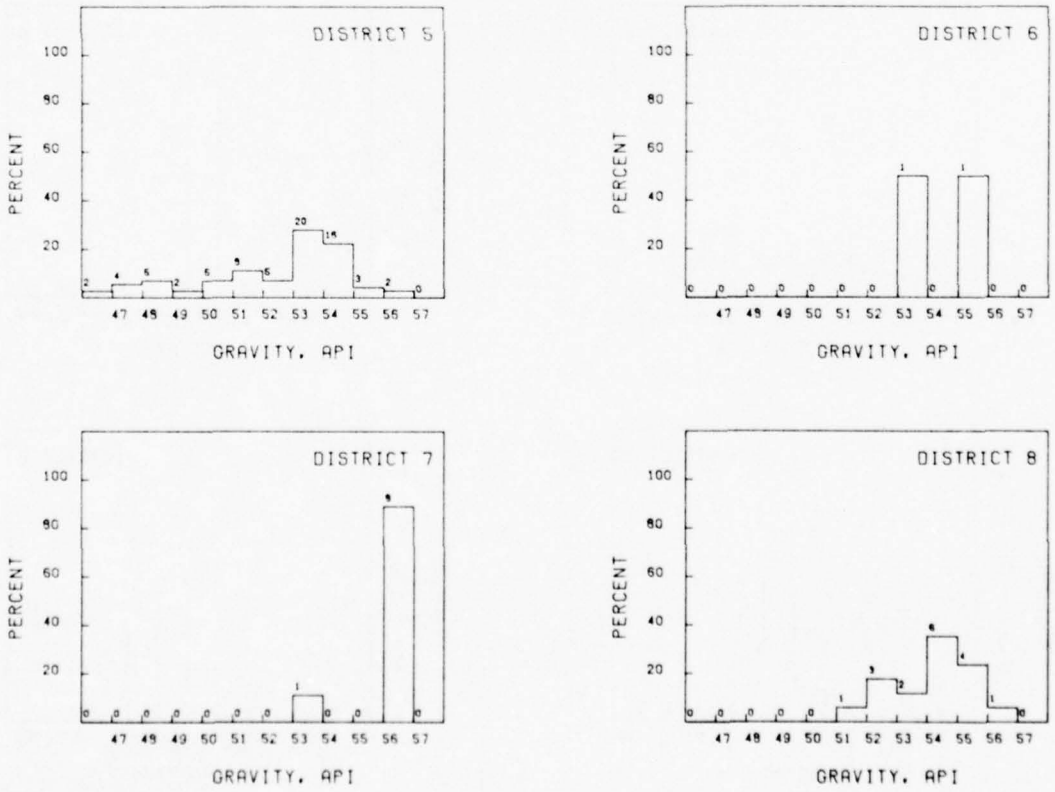
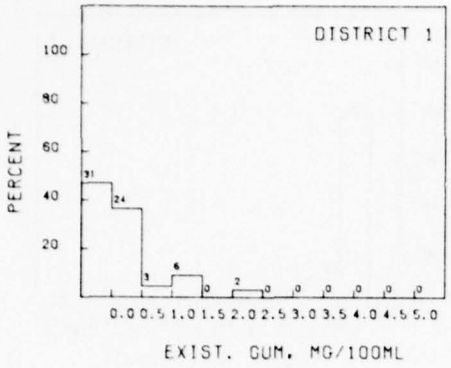
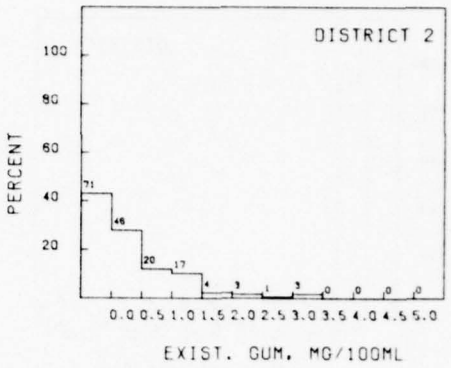
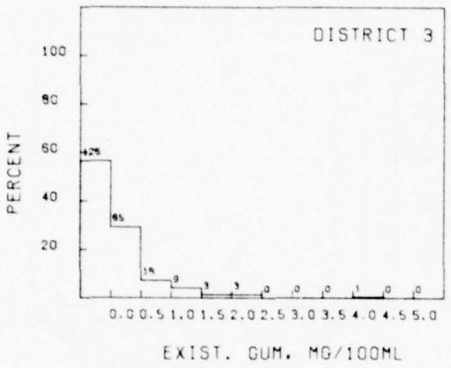


Figure 7. Gravity, DEG API









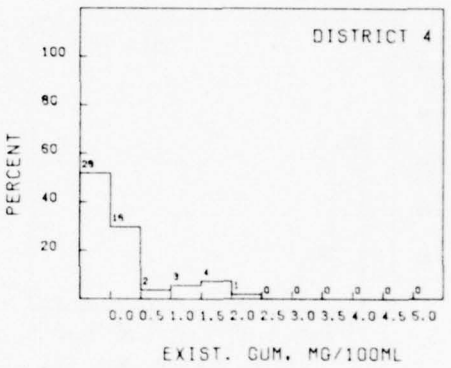
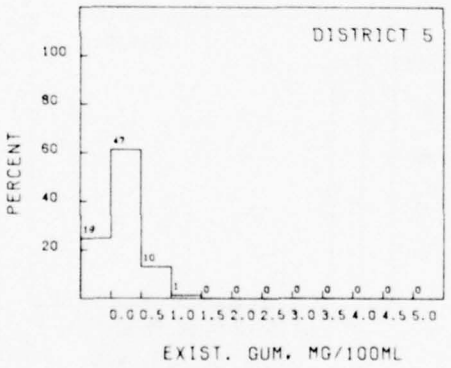
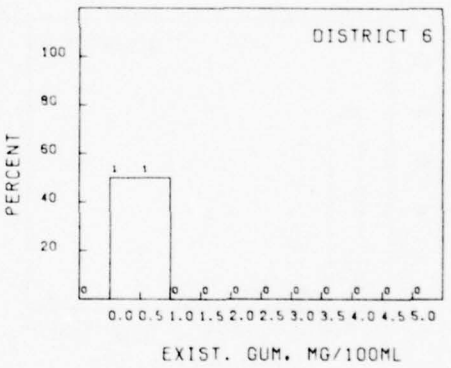
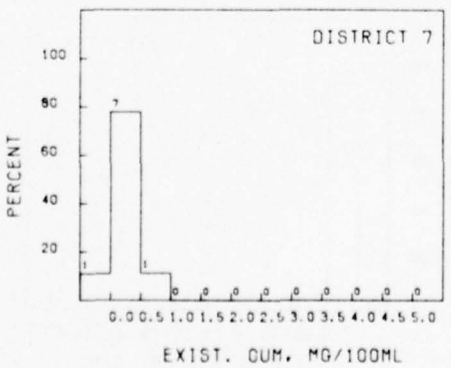
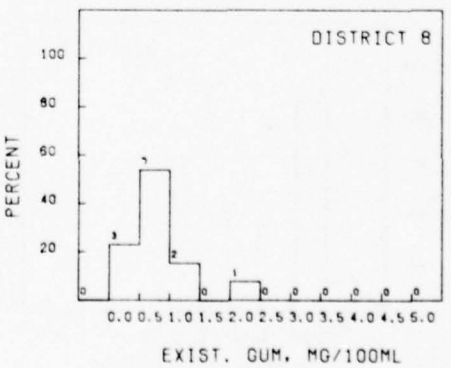


Figure 8. Existent Gum









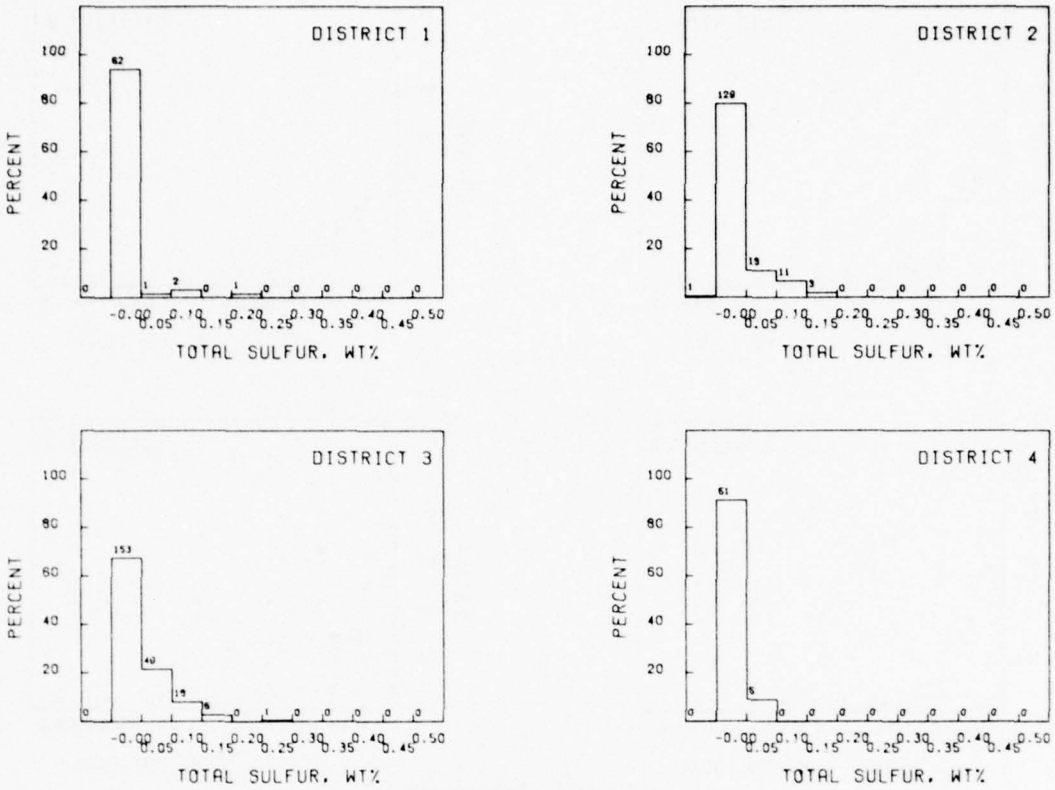
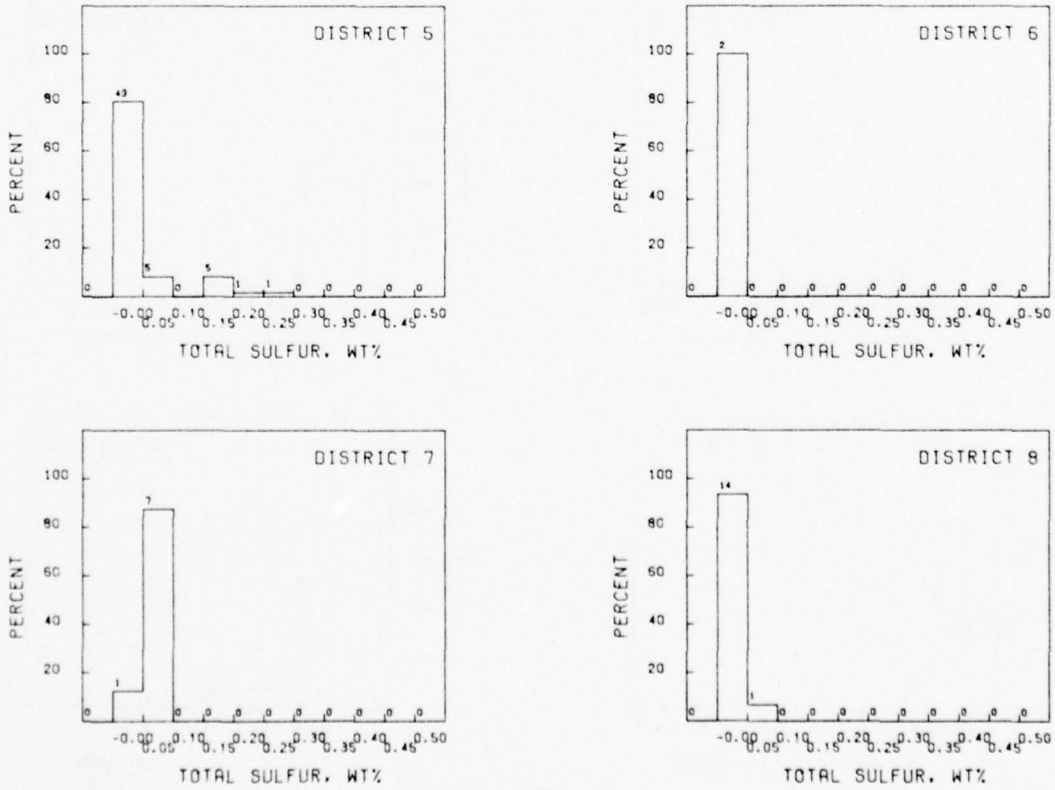


Figure 9. Total Sulfur



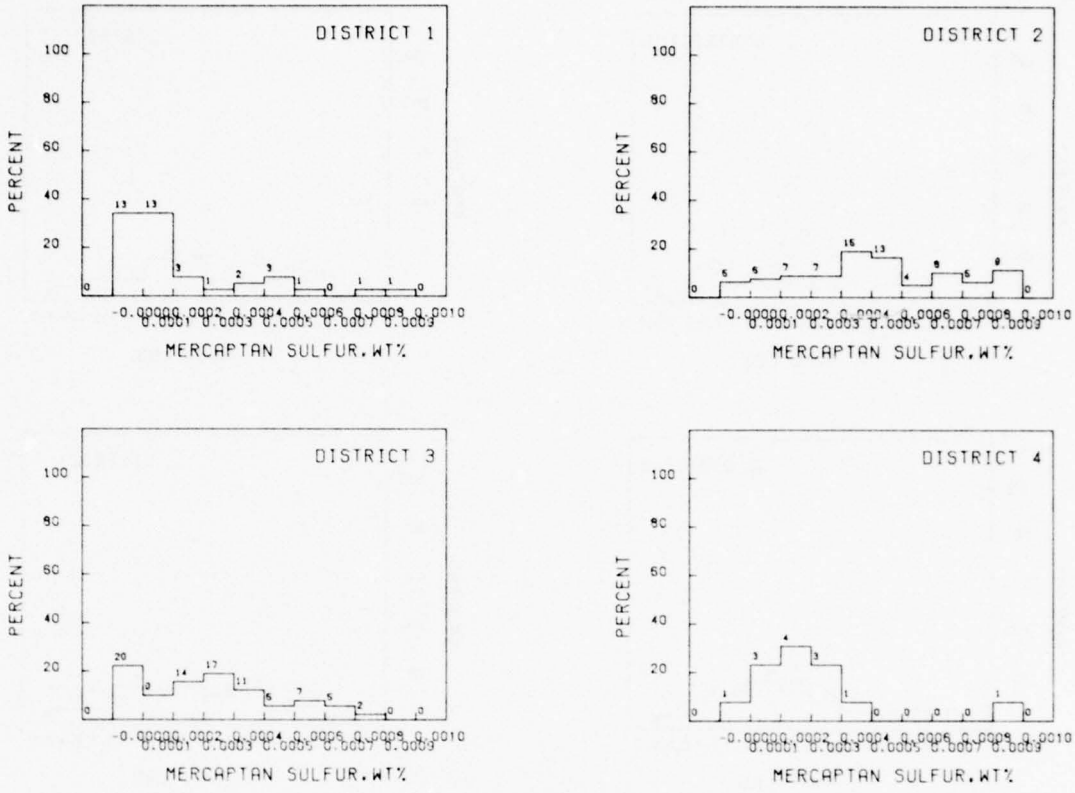
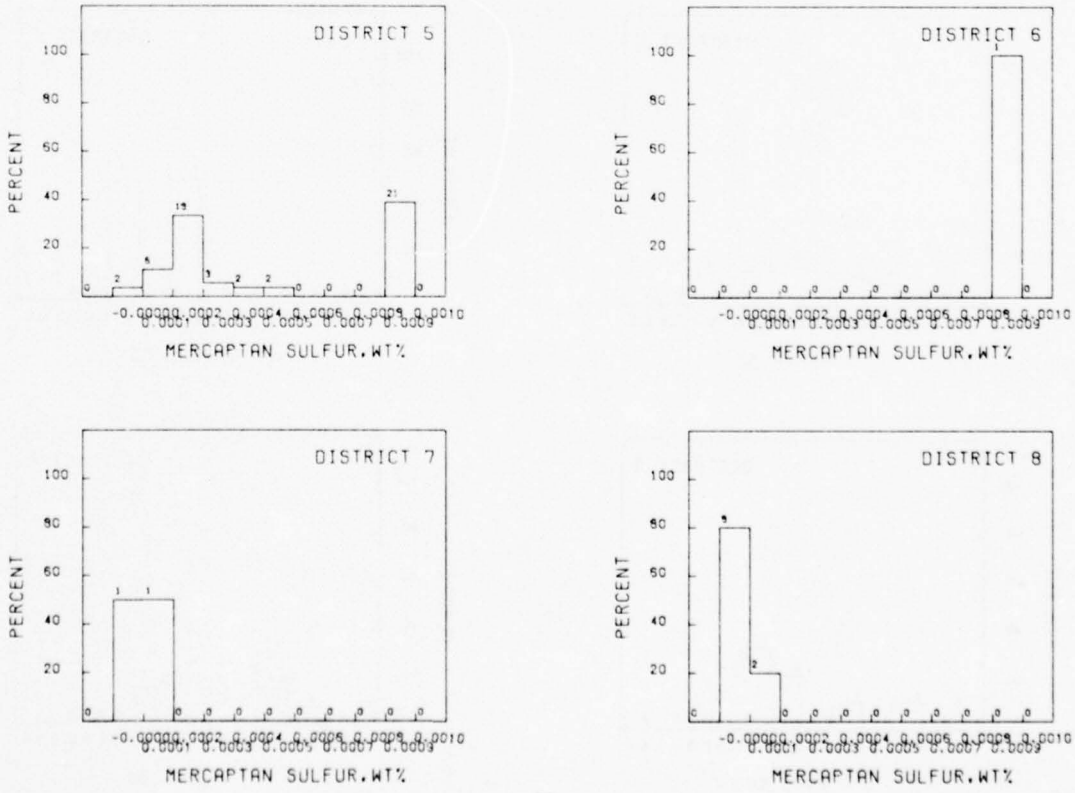


Figure 10. Mercaptan Sulfur



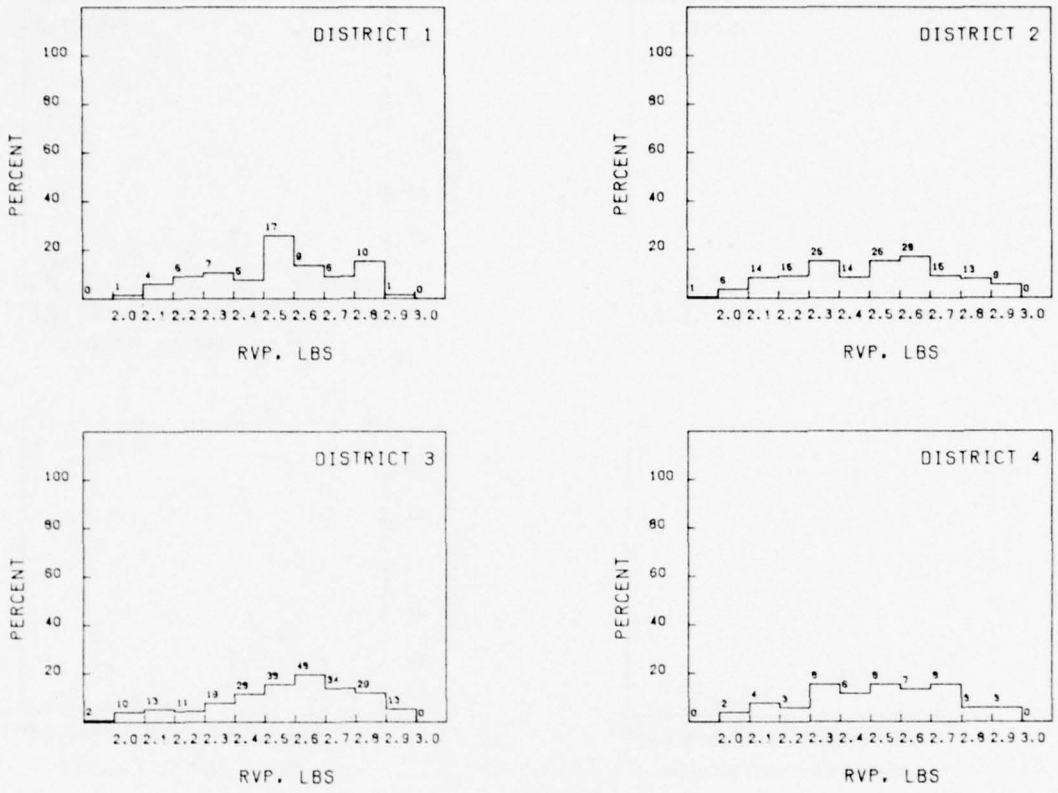
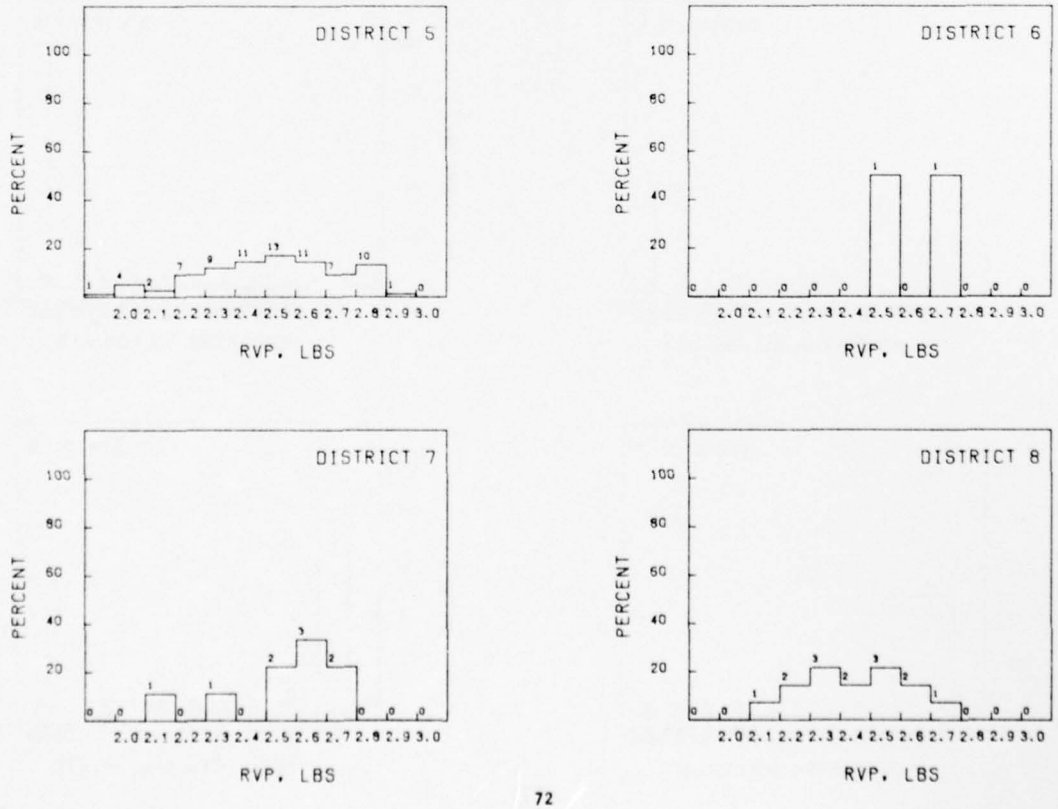


Figure 11. Reid Vapor Pressure



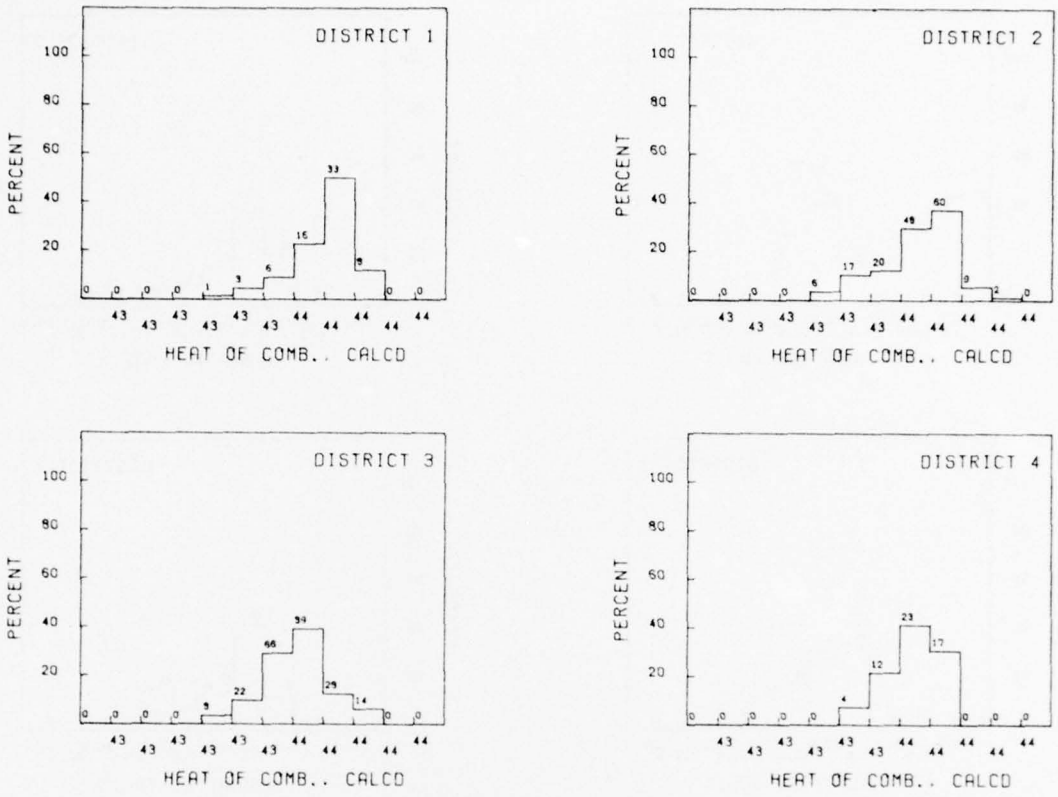
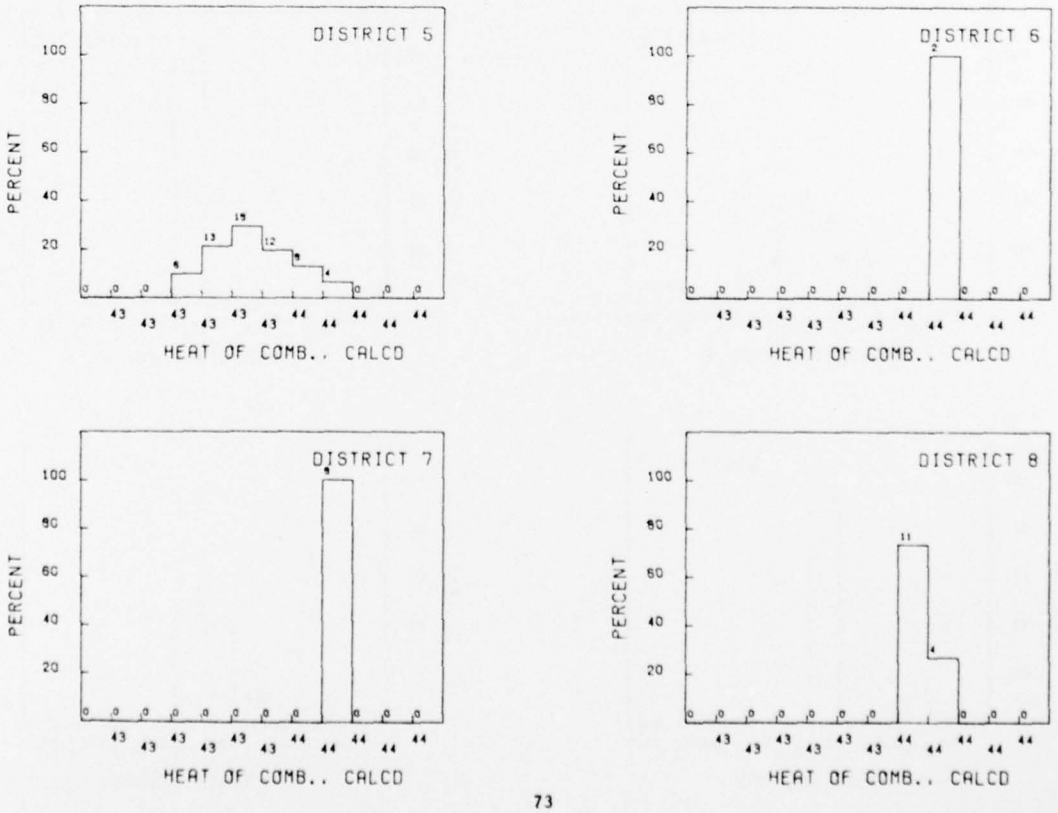


Figure 12. Heat of Combustion



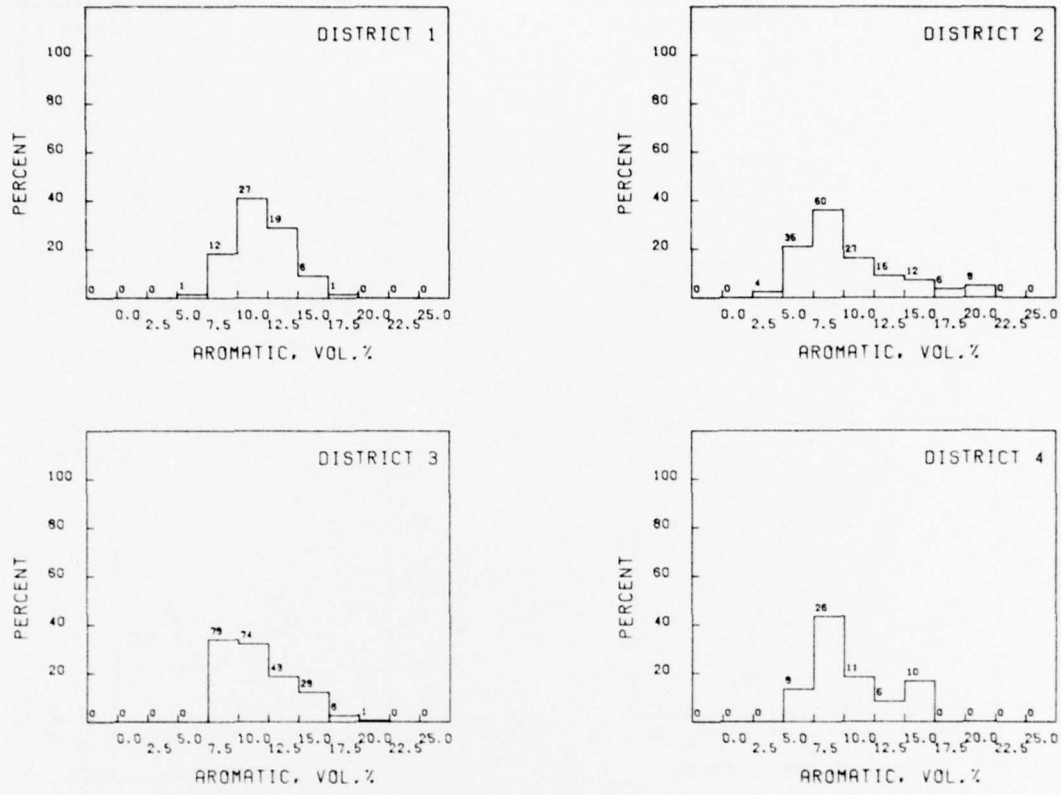
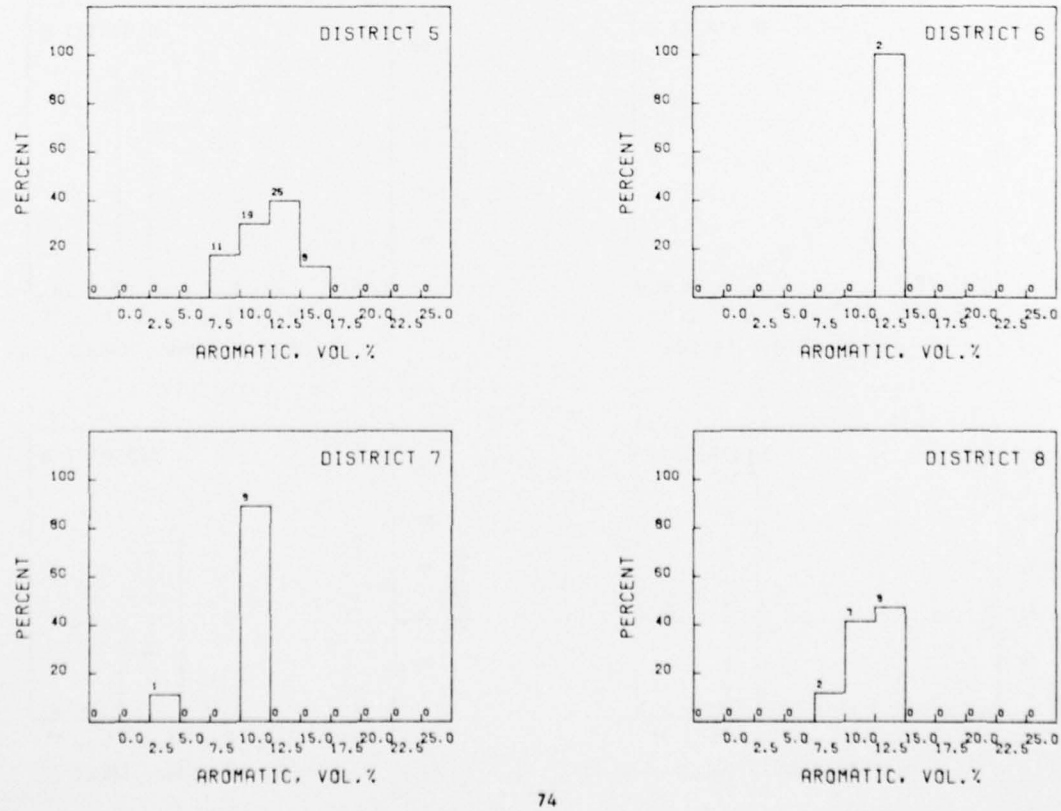


Figure 13. Aromatic Content



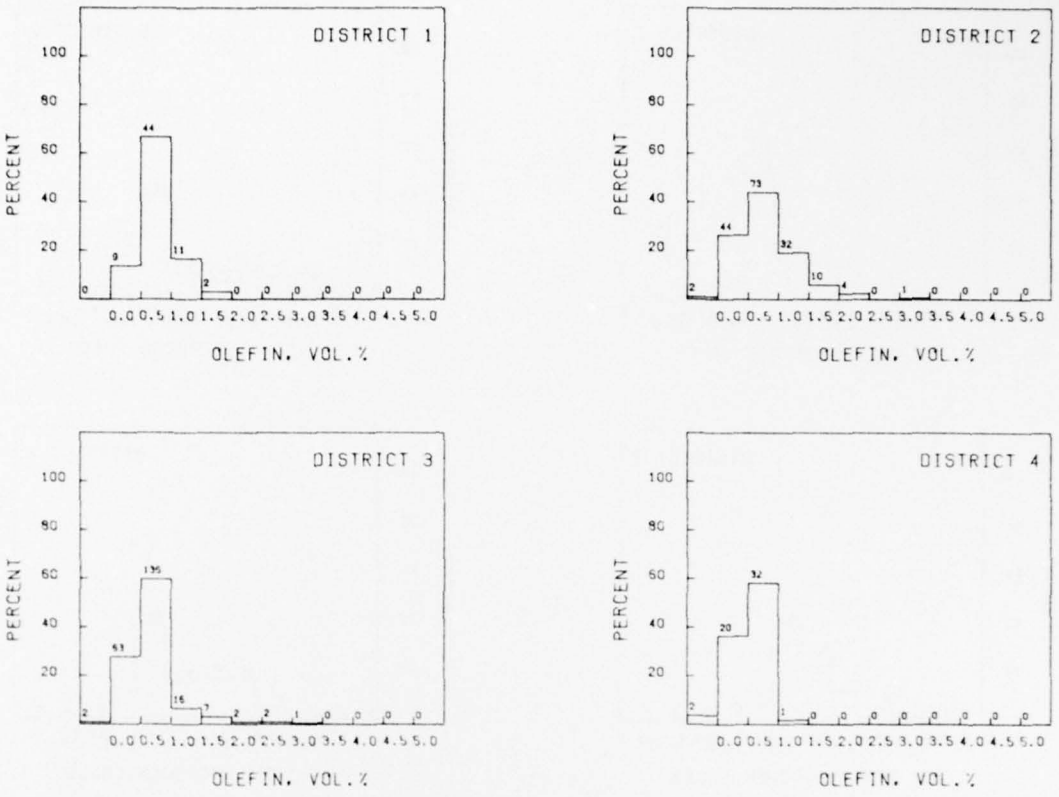
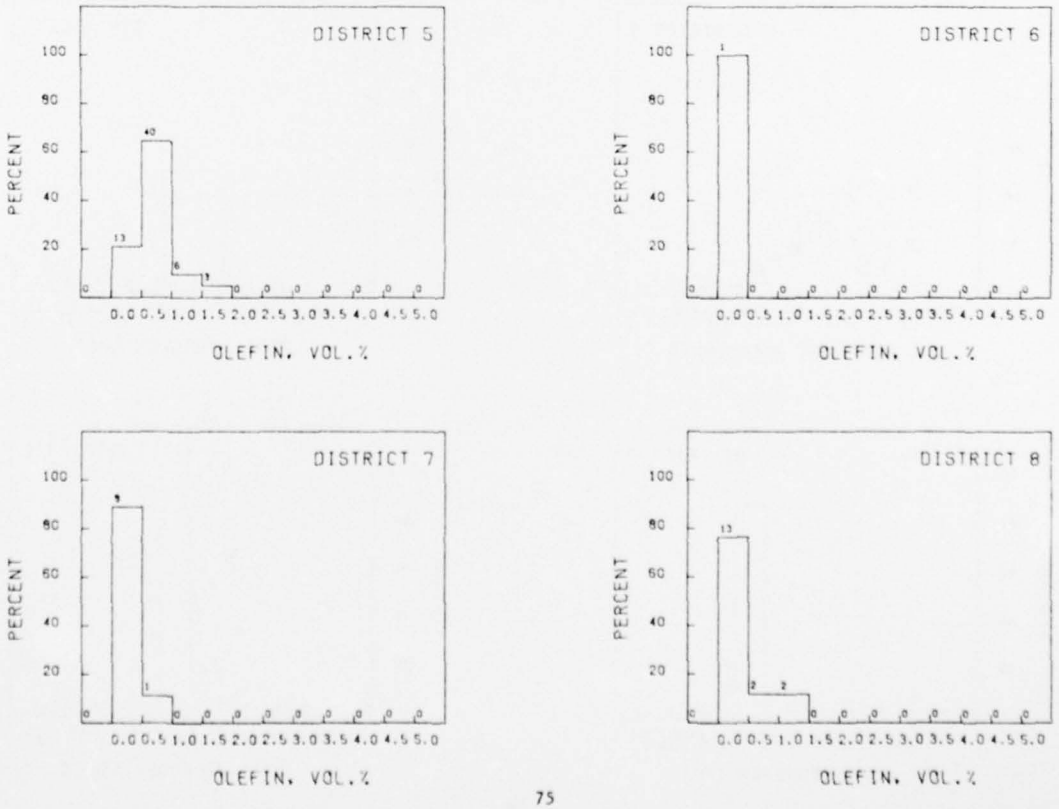


Figure 14. Olefin Content



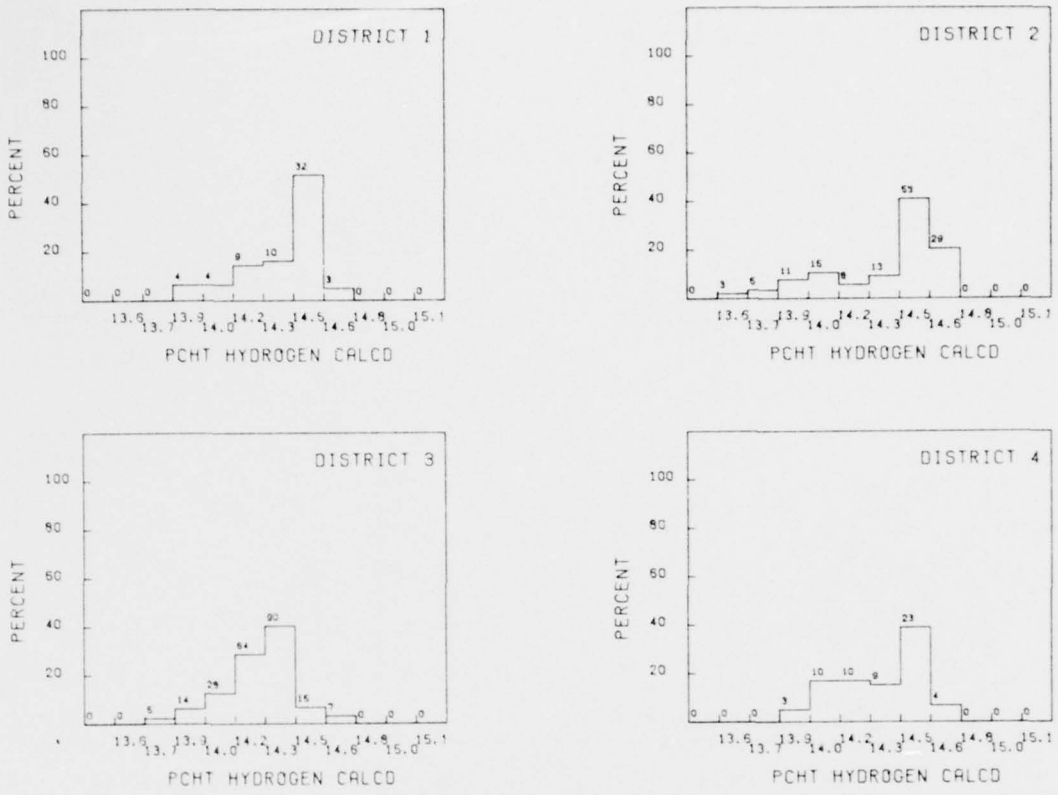
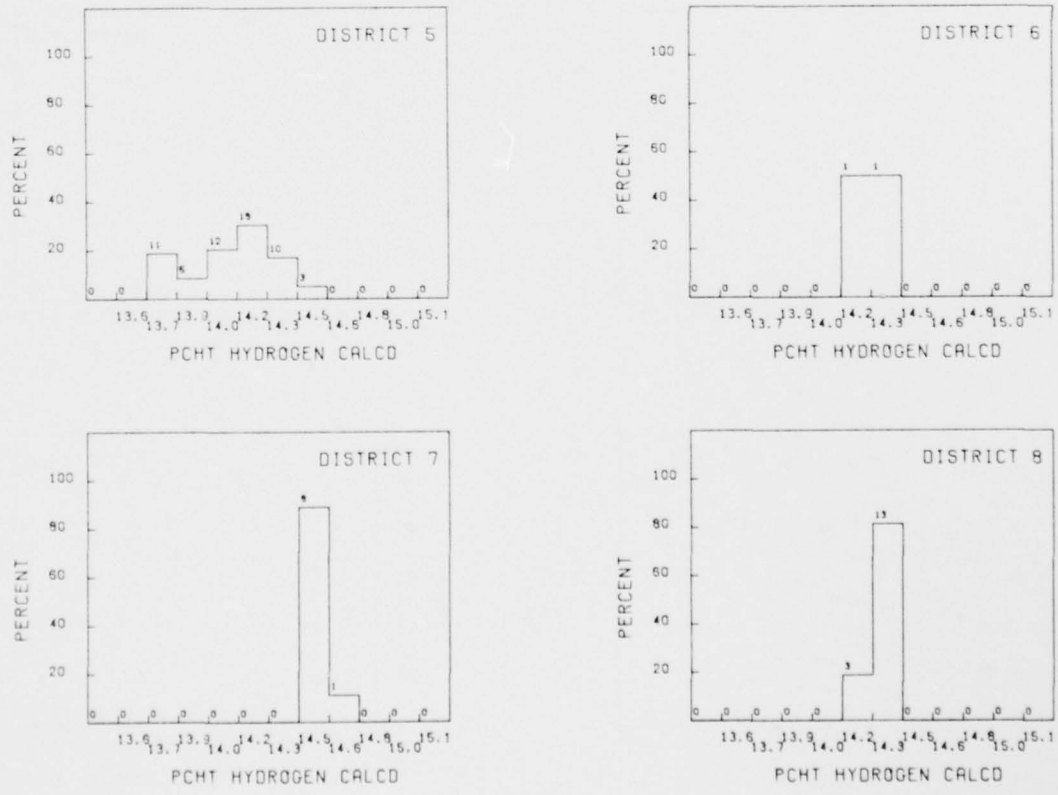


Figure 15. Percent Hydrogen



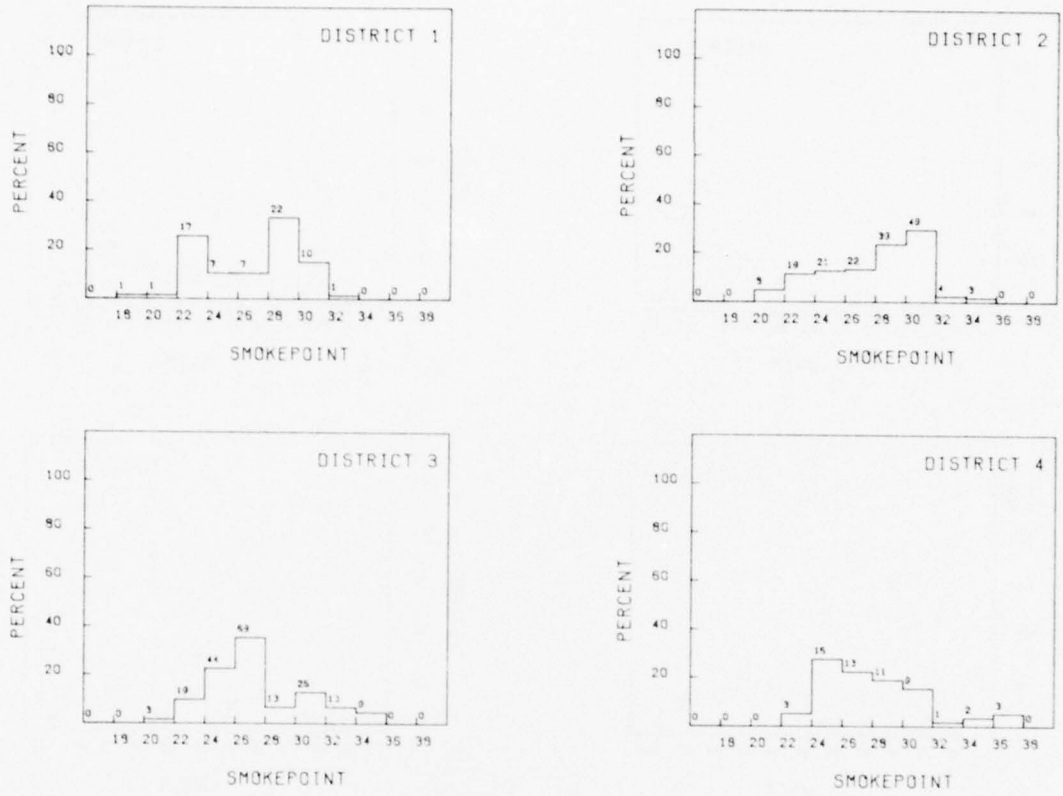
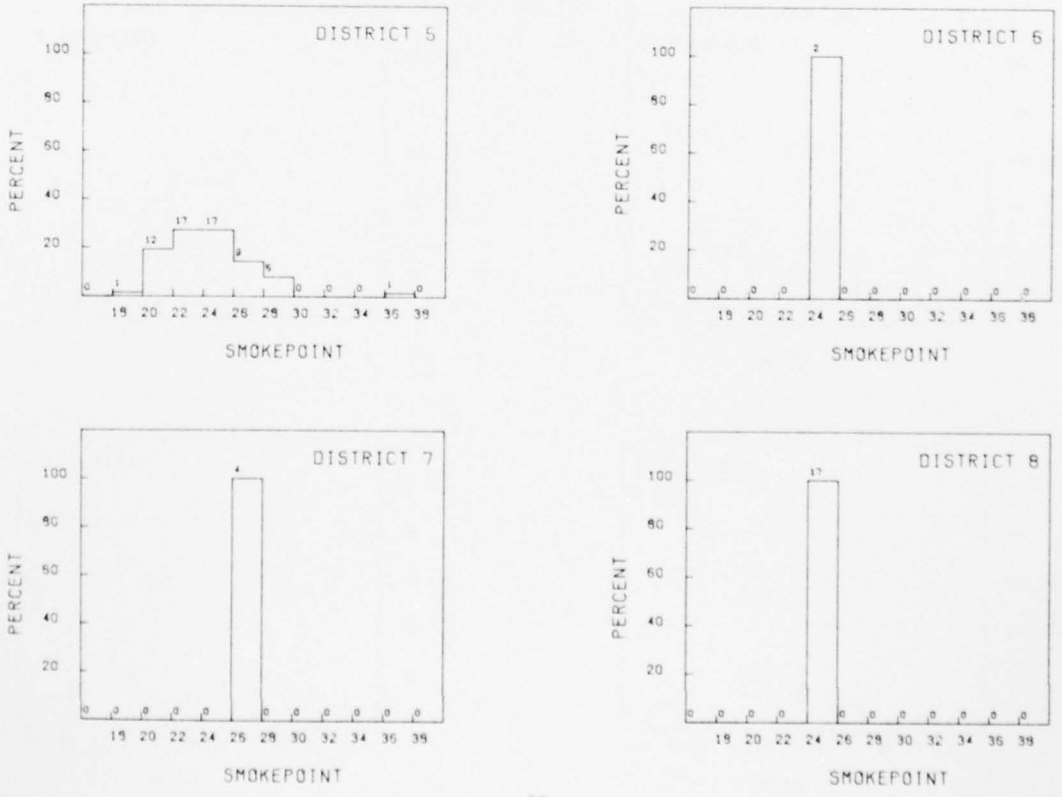


Figure 16. Smoke Point



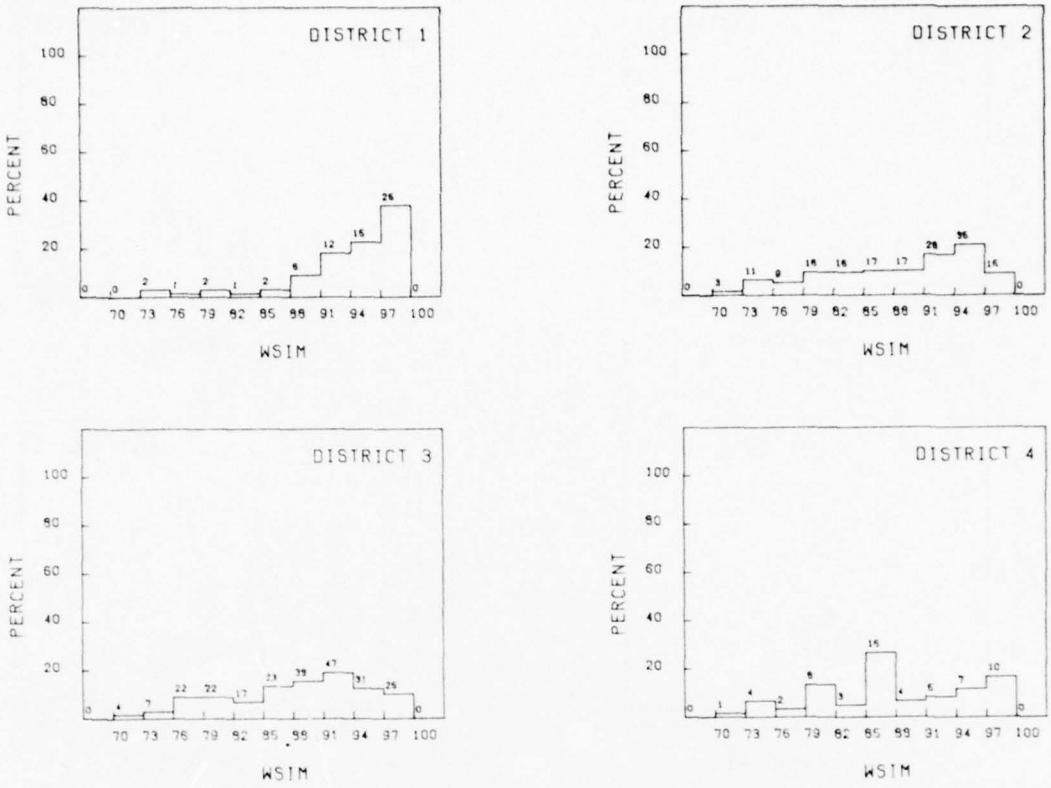
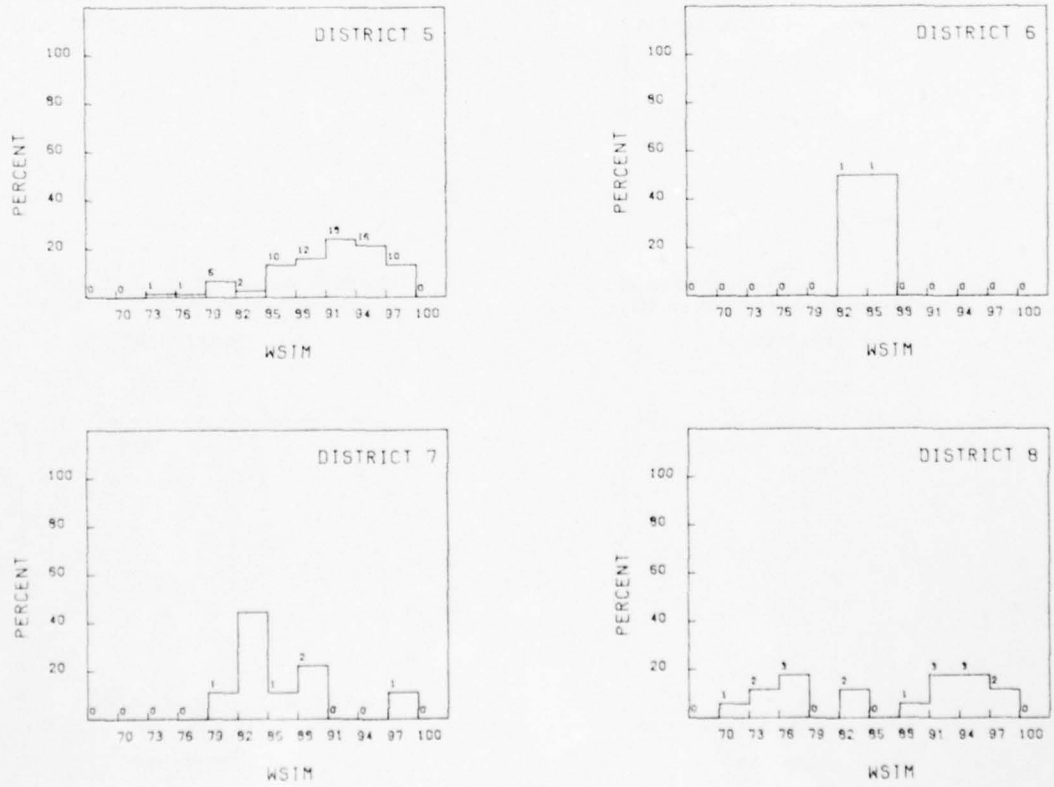


Figure 17. Water Separation Index, Modified



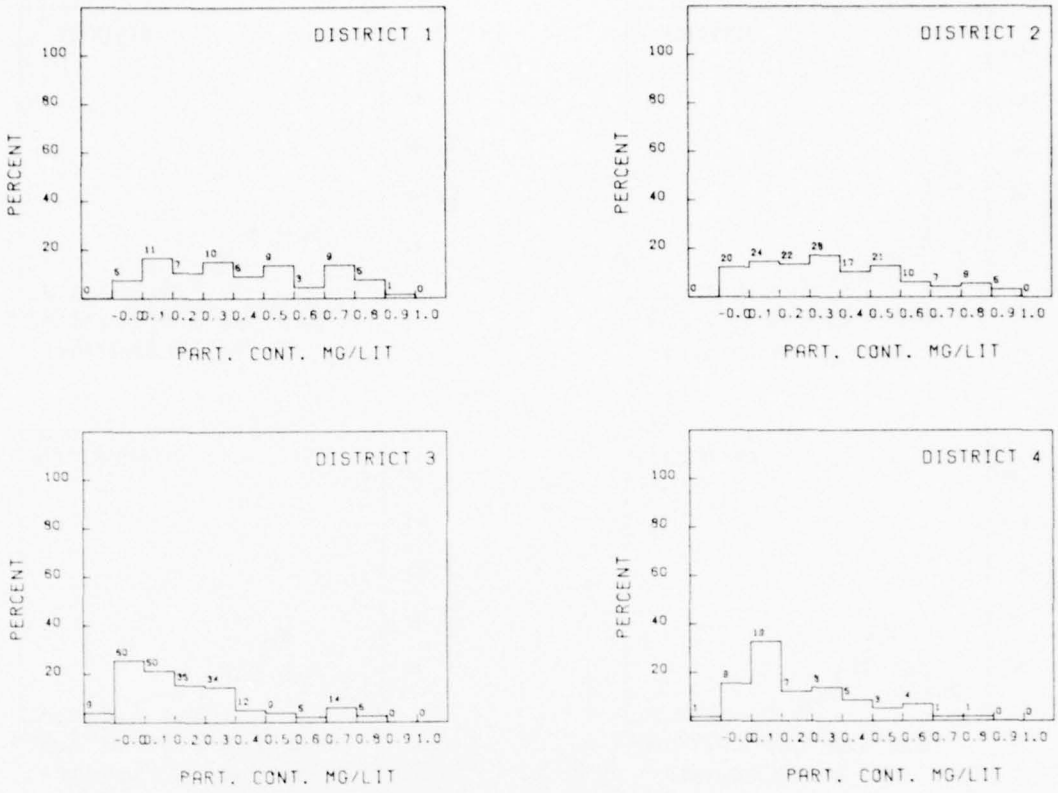
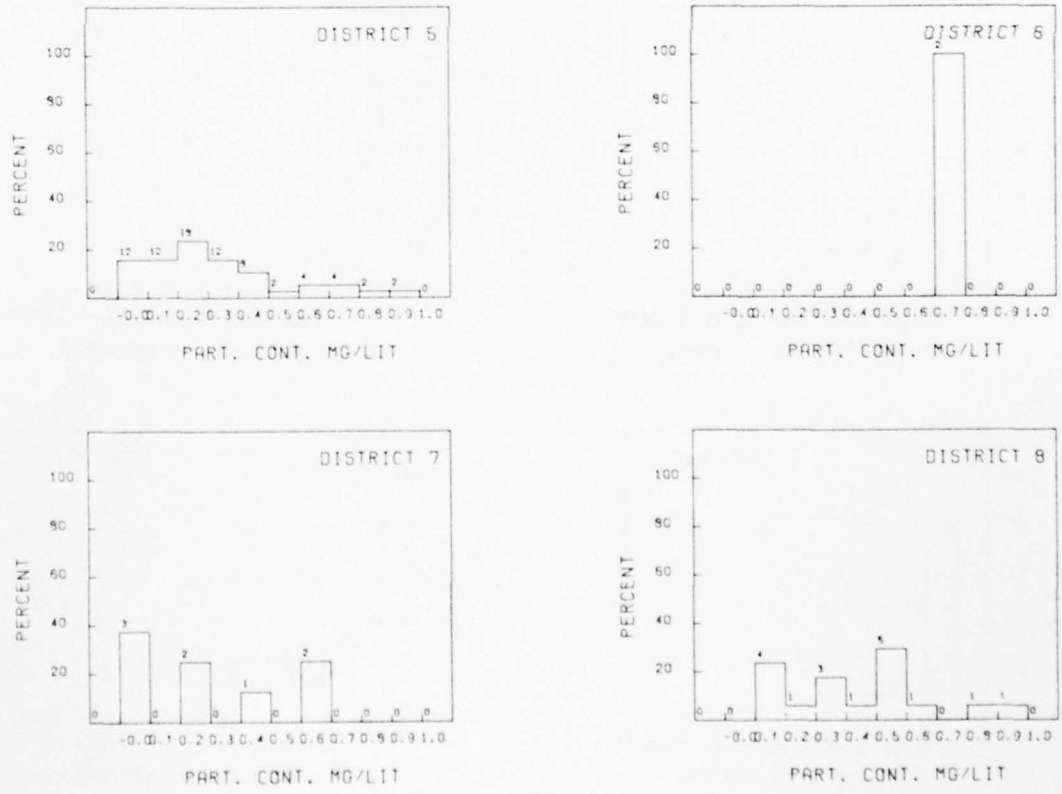


Figure 18. Particulate Contaminate



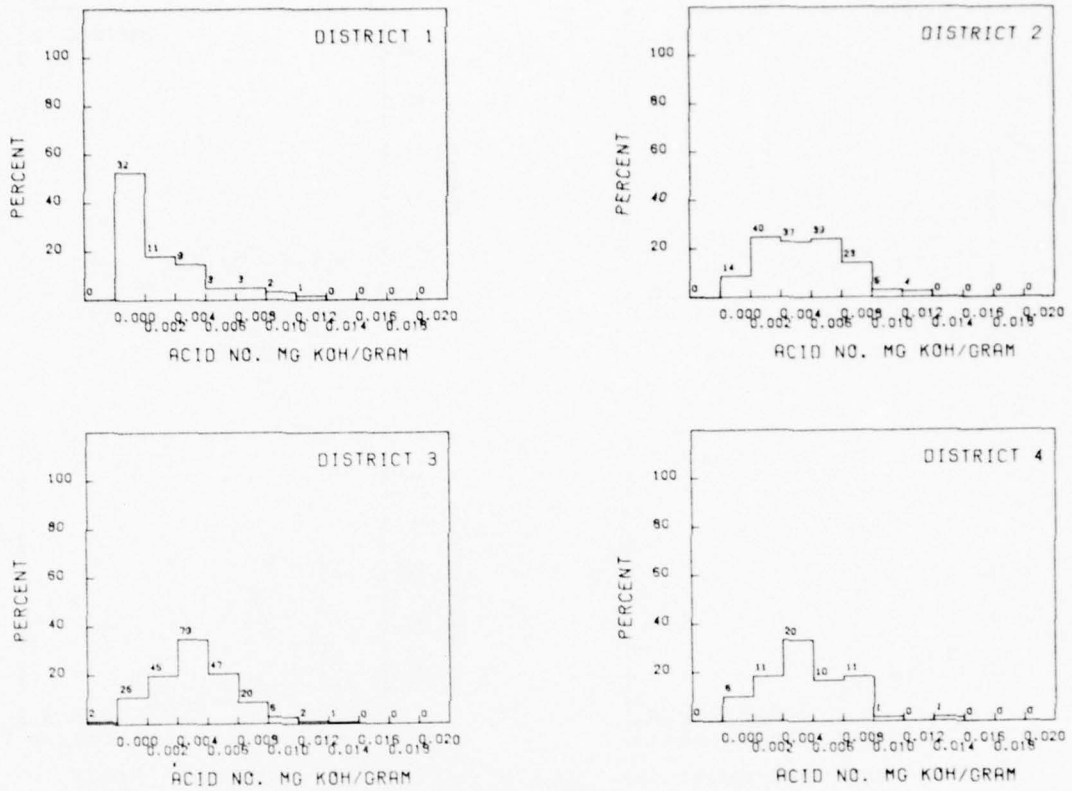
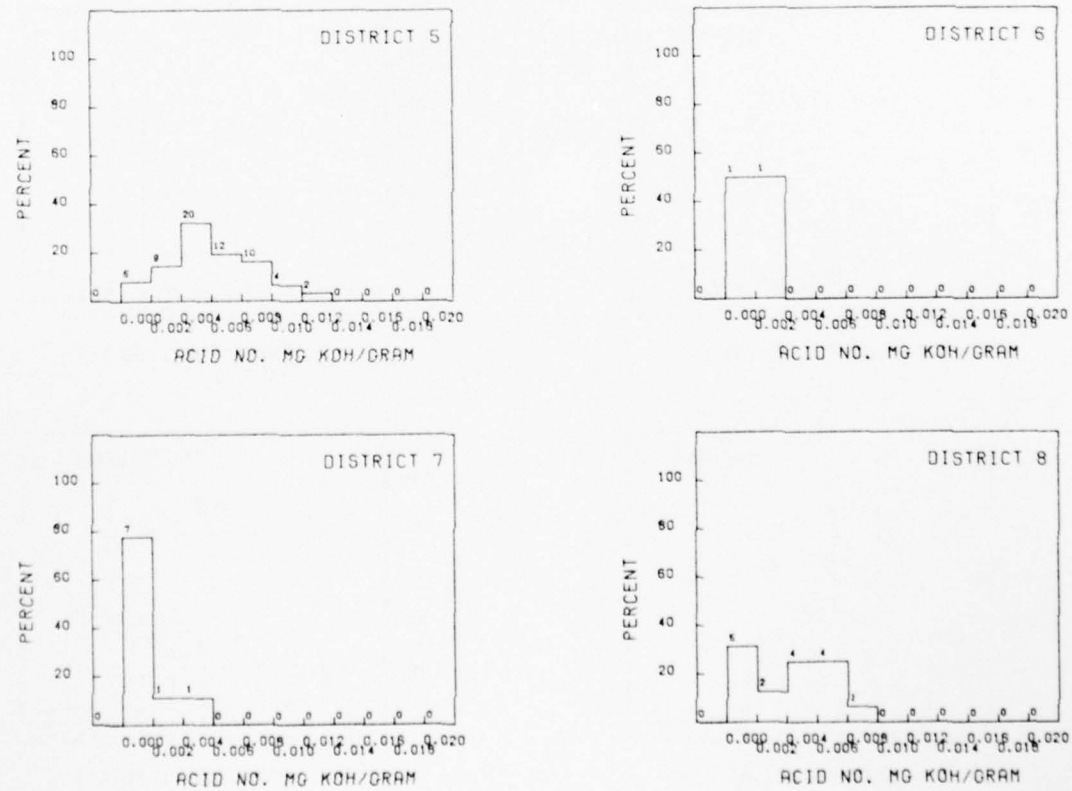


Figure 19. Acid Number



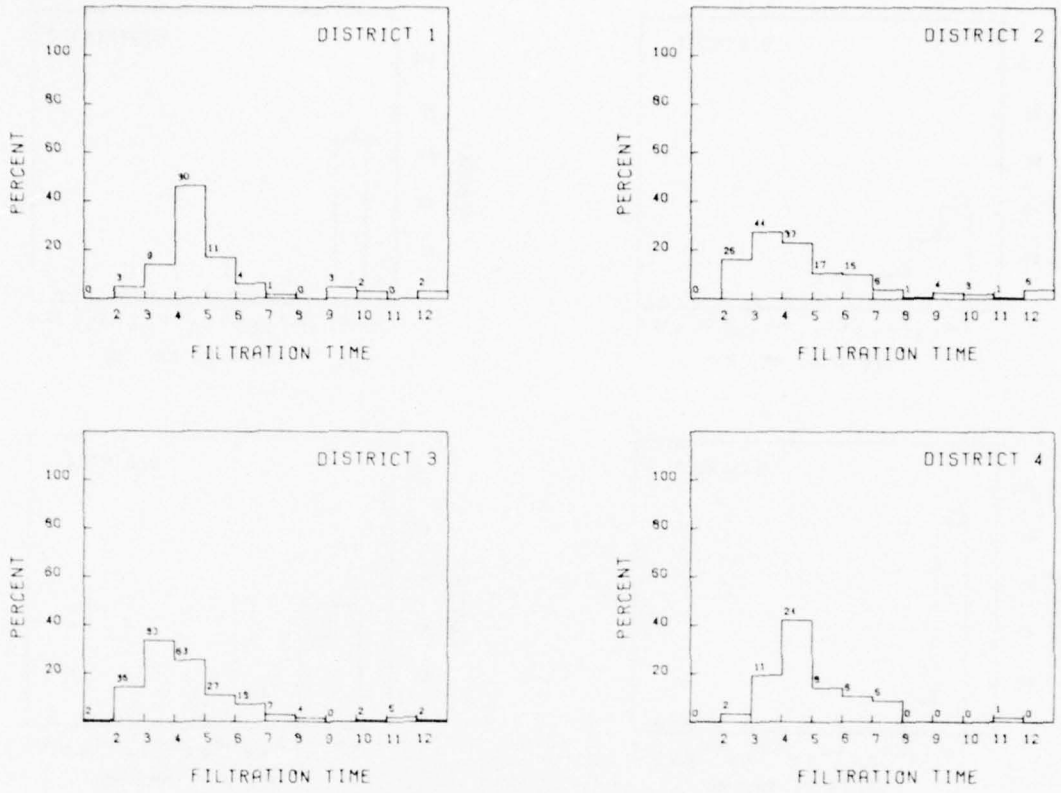
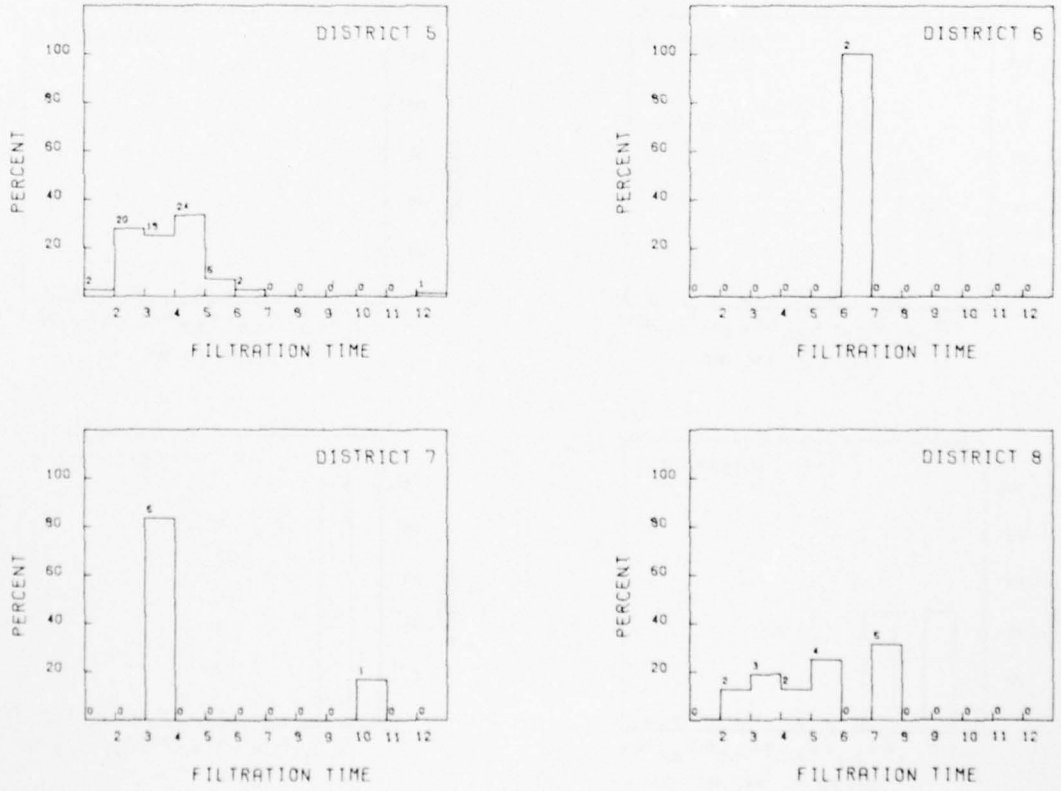


Figure 20. Filtration Time



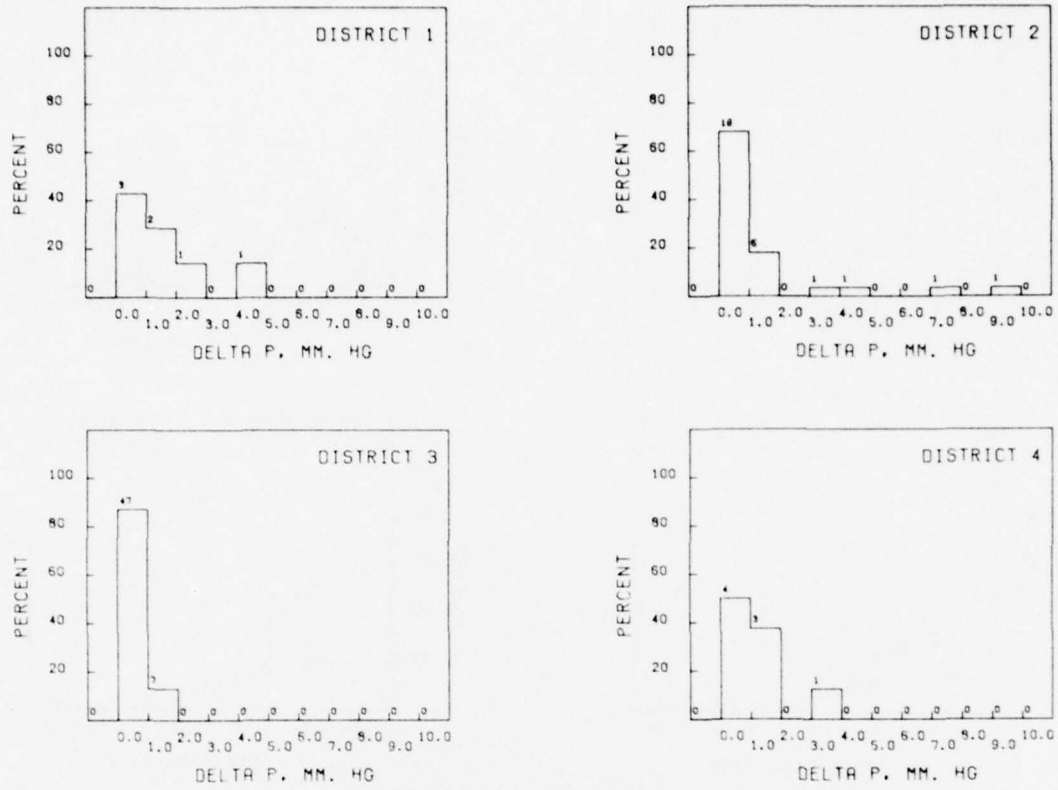
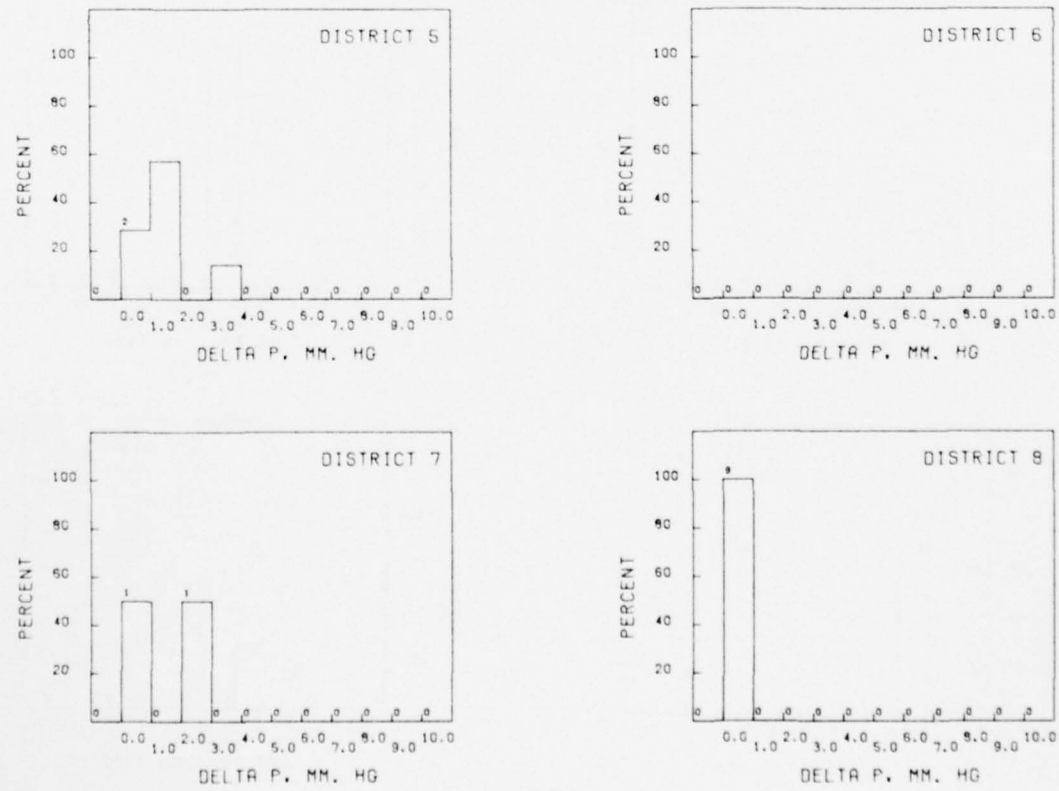


Figure 21. Thermal Stability, ΔP



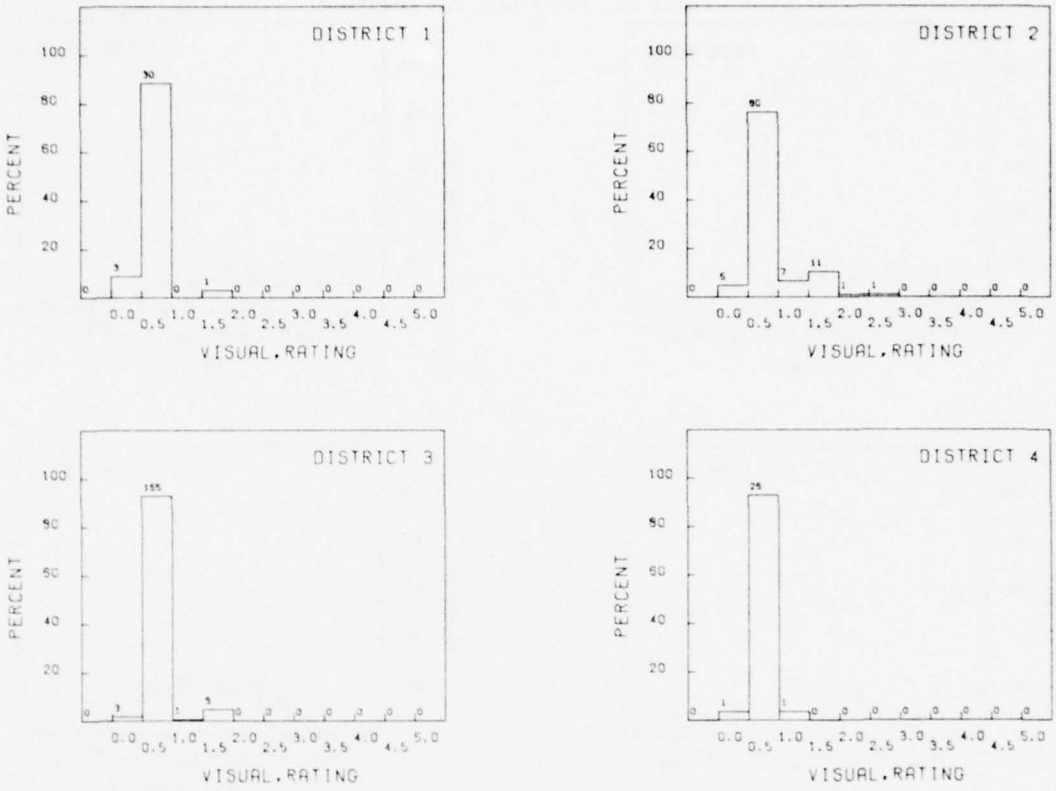


Figure 22. Thermal Stability, Tube Color Code

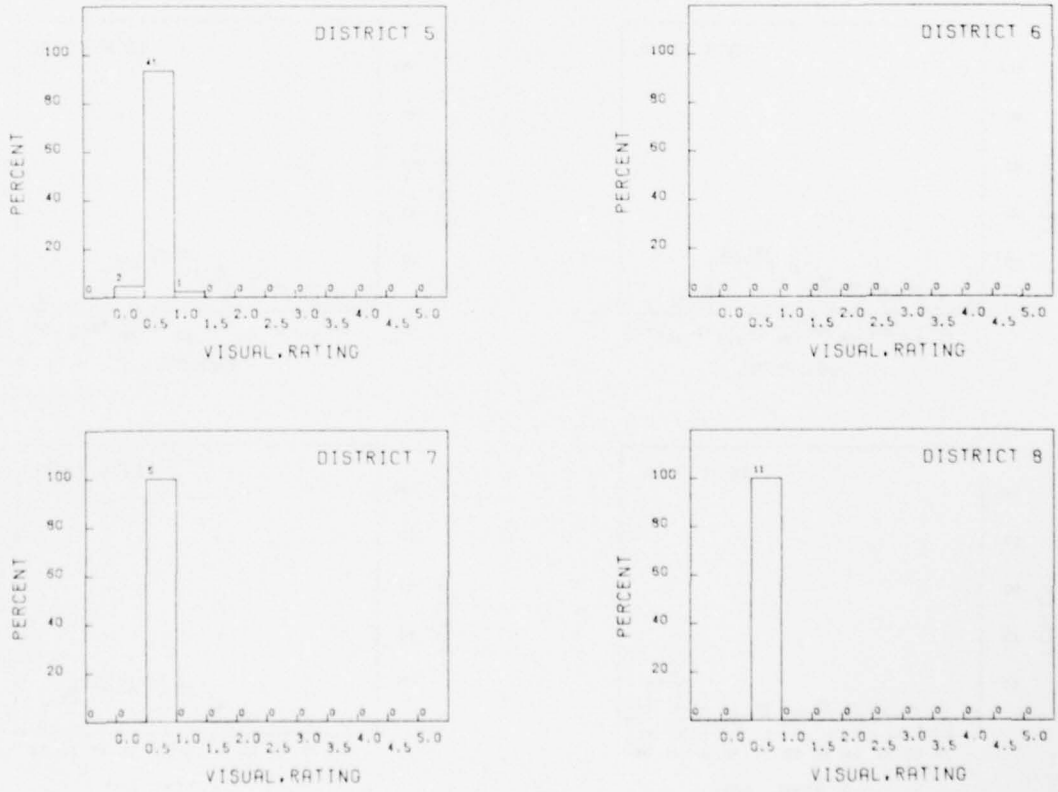
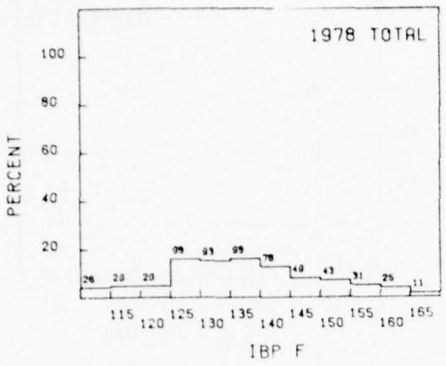
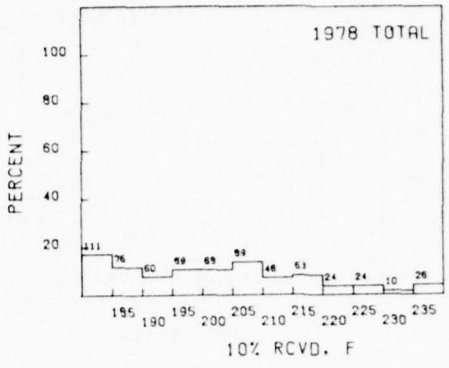
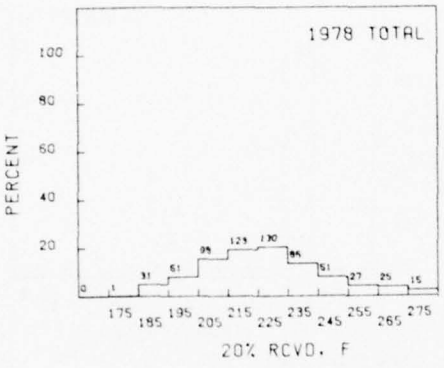
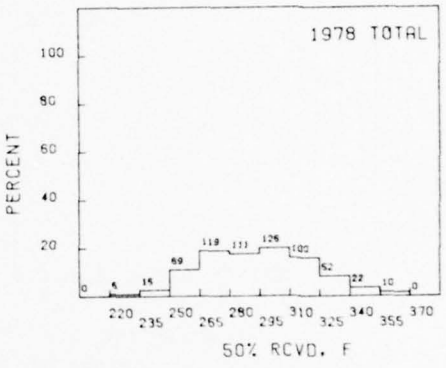


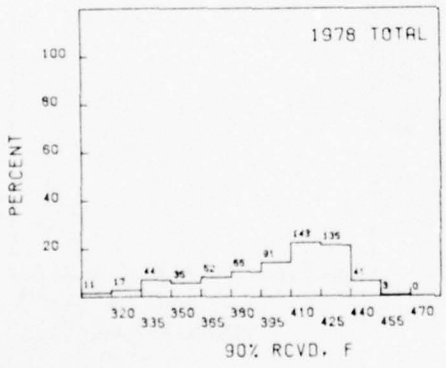
Figure 23. 1978 Totals (All Properties)

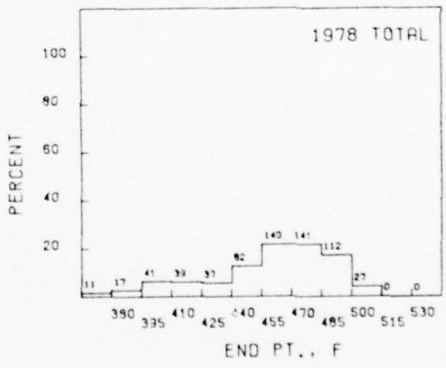


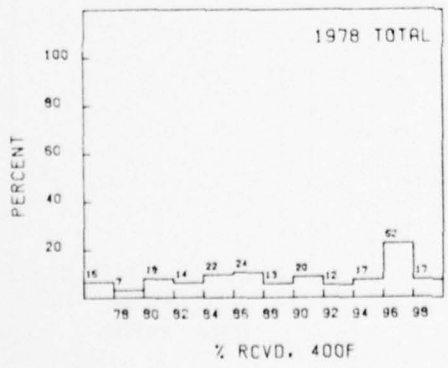


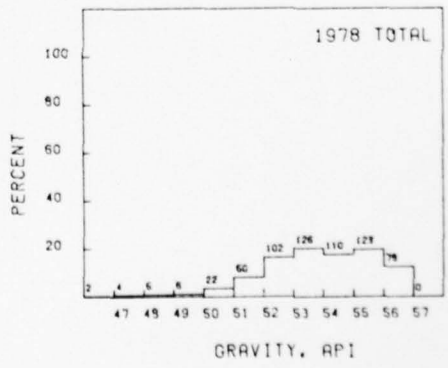


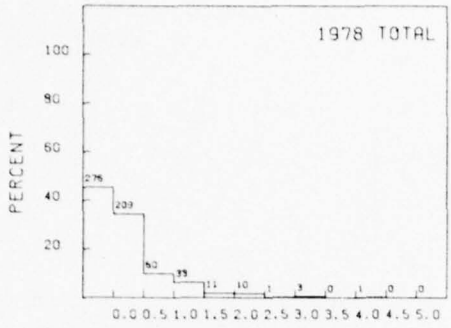




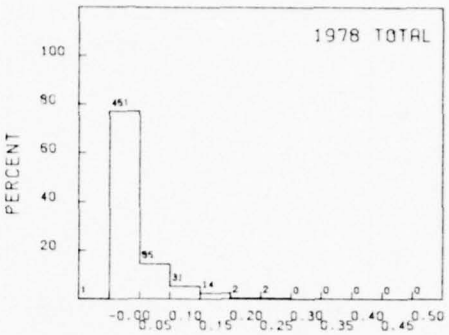




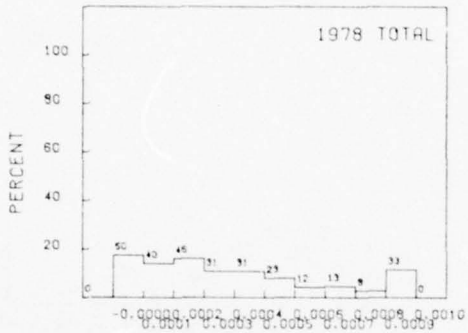




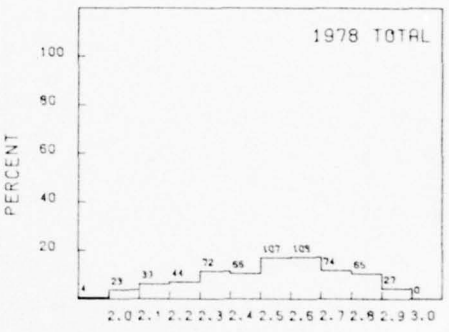
EXIST. GUM, MG/100ML



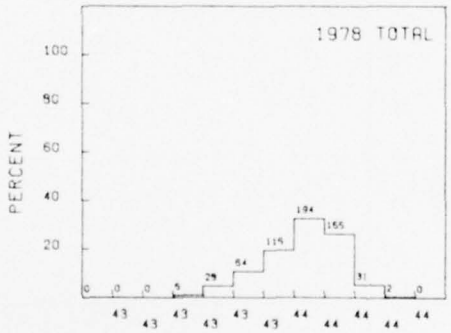
TOTAL SULFUR, WT%



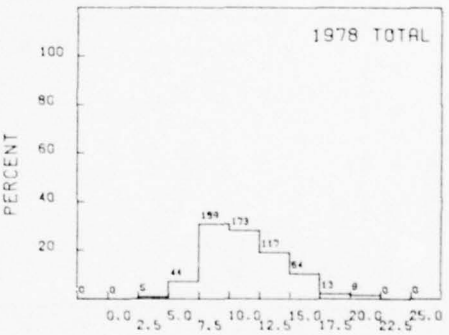
MERCAPTAN SULFUR, WT%



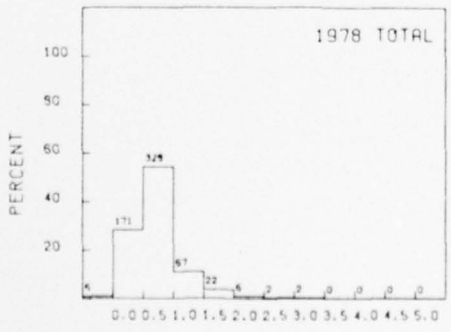
RVP, LBS



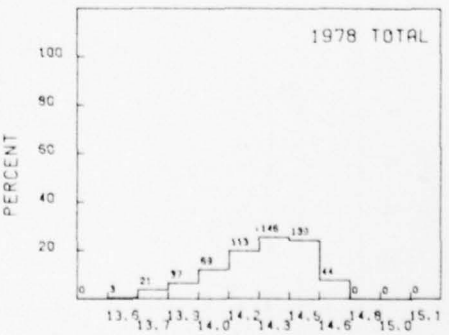
HEAT OF COMB., CALCD



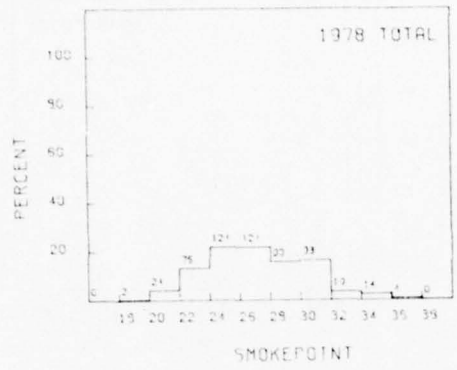
AROMATIC, VOL.%

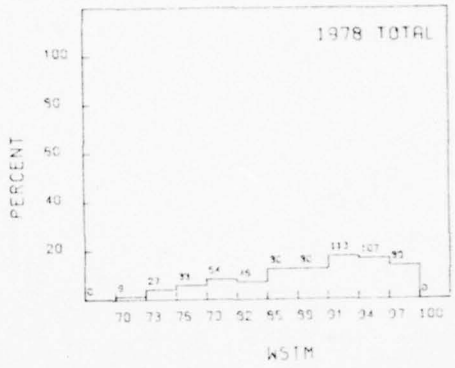


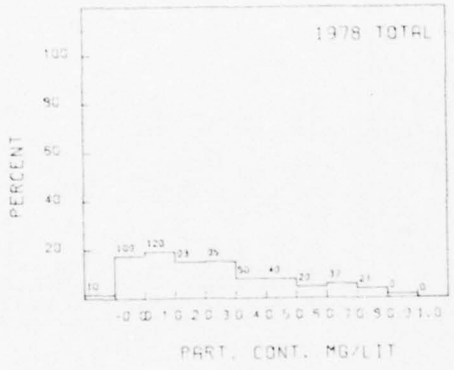
OLEFIN, VOL.%

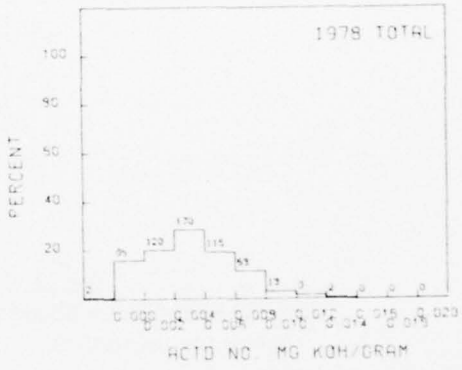


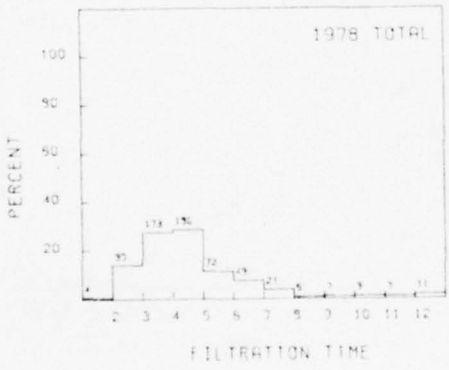
PCHT HYDROGEN CALCD

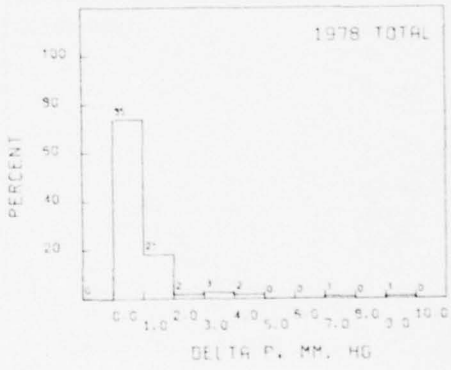


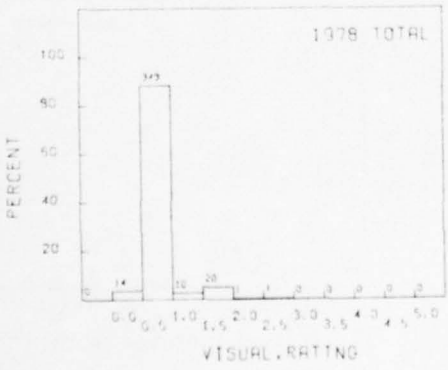












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